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PROFESSIONAL

WOMEN AND MINORITIES

A Manpower Data Resource Service

COMMISSION ON PROFESSIONALS IN SCIENCE AND TECHNOLOGY

1500 Massachusetts Avenue, N.W., Suite 831

Washington DC 20005

NINTH EDITION

MARCH 1991

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Ninth Edition

BETTY M. VETTER

COMMISSION ON PROFESSIONALS IN SCIENCE AND TECHNOLOGY

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TABLE OF CONTENTS

FOREWORD 1
INTRODUCTION 1
Organization of the Book 1
The Data 1
Correlating Degree and Workforce Data 2
Terminology for Minority Groups 2

Affirmative Action 2
Statutes and Orders 2
Regulation and Enforcement 3
Definition of Affirmative Action 3

CHAPTER 1 - GENERAL ENROLLMENTS 5

Live Births, by Sex and Race, 1933-1988 5

U.S. Population
By Race and Ethnicity and Educational Attainment 6
School Age Resident Population by Sex and Race 1960-87 7

High School Students and Graduates
Graduates and Population 8
Trends in Math and Science Proficiency 10
International Comparisons in Math and Science 12
Carnegie Units Earned by Graduates, 1982, 1987 14
SAT, AC and Advanced Placement Scores by Sex and Race 15
Math and Science Credits Earned by Graduates, by Sex and Race 19
Intended College Majors, by SAT Scores, Sex, and Race 20

College Freshmen
Racial Background 1955-87 22
Probable Major, by Sex 1973-1989 23
Majors of Merit Scholars by Sex and Fioeld 1982-88 24
Probable Career Choices by Sex and Race 1978-89 25

College Enrollments
First Time Freshmen and Total Enrollments 1955-87 27
Rates of Enrollment of Recent Graduates by Sex and Race 1960-87 28
Rates of Enrollment by Age Groups, Sex, and Race 29
By Sex and Race 1976-88 31
By Type of Institution, Sex and Race 34
By Level , Race and Citizenship 35
Disabled Students Enrolled 36
By Major Field, Level and Sex 37
Foreign Students by Field and Country of Origin 39

Graduate Enrollments
By Sex, Attendance Status and Control 1969-87 40
For First Professional Degrees 40
Graduate Record Exam Scores by Undergraduate Major, Sex and Race 41
In Science and Engineering, by Field, Sex, Race and Citizenship 42
Foreign, Full Time 49
by Source of Support, Sex and Citizenship 50

CHAPTER 2 - GENERAL DEGREES 53

Doctorates
Awarded to Women, by Decade 1920-1989 53

Doctorates, (continued)
By Sex, Citizenship and Race, 1988, 1989 54
By Citizenship and Visa Type, 1960-89 56
To U.S. and Foreign Citizens by Race/Ethnicity and Visa Type 57
To U.S. Citizens by Field, Sex, and Race/Ethnicity 1988, 1989, and 1975-89 58
By Field and Sex, 1979-1989 66
To Foreign Citizens on Temporary Visas, by Field, Sex and Race/Ethnicity 67
To Asians, by Citizenship and Visa Type and by Field 69
To Blacks and Hispanics, 1975-1989 70
Citizenship by Field, 1960-89 71
Postgraduation Commitments by Sex, Race, Citizenship and Broad Field 73
Time to Degree by Demographic Group 76
Source of Support Through Graduate School by Sex, Race and Citizenship 77

All Degree Levels
Earned Degrees by Level and Sex 1970-95 82
Percent of Bachelor's and Master's Degrees Awarded to Women by Field 1971-88 83
Degrees in Science and Engineering by Level, Field and Sex, 1950-89 84
Bachelor's Degrees: All, Science and Engineering, Natural Science and Engineering 1968-89 . 87
Degrees Awarded in 1988-89 by Level, Detailed Field, and Sex 88
Degrees Awarded in 1987-88 by Level, Detailed Field, and Sex 91
Earned Degrees by Field, Level and Sex, 1989, 1988, 1987 94
Degrees Awarded by Level, Field, Sex, and Race/Ethnicity 1989 97
Percent Women Among Science and Engineering PhDs by Race/Ethnicity, 1985, 1987, 1989 . . 100
Degrees Awarded by HBCUs, Selected Fields, 1982, 1985, 1987 100
Science & Engineering Degrees by Level, Field, Sex and Race/Ethnicity, ... 101
Percent Women Among Science and Engineering Graduates by Level, Field and Race 1985-87 102
Degrees by Level, Racial/Ethnic Group and Sex 1977-1989 103
Graduate Degree Attainment Rates in Science and Engineering by Sex 1972-1989 106
Science/Engineering PhD Degrees per Thousand U.S. 30-Year Olds 1966-88 107

Associate Degrees by Field, Sex and Race/Ethnicity, 1989, 1987 108

CHAPTER 3 - GENERAL PROFESSIONS 112

Doctorates in Professional Fields by Field and Sex 1920-89 112
First Professional Degrees Conferred by Field and Sex 1948-89 113
First Professional Degrees by Field, Racial Group and Sex, 1989, and Change from 1987 114

Architecture and Environmental Design 115
Enrollments by Type of Program, Sex, Minority Status and Citizenship 116
AIAA Membership by Race and Sex 1989, 1991 116

Accounting and Business Administration 117
Degrees by Level and Sex 1972-89 117
Minority CPAs in Major Accounting Firms by Sex and Minority Group 1976-89 118
Placement of Accounting Graduates from HBCUs, 1973-88 118
Minorities and Women who are Partners in Major Accounting Firms and Minority Firms 119

Law 120
Degrees 1971-89 120
First Year and Total Enrollments by Sex and Race/Ethnicity 1970-88 121
Federal Workers Employed in Legal Occupations by Title, Sex and Race/Ethnicity 122

CHAPTER 4 - GENERAL WORK FORCE 123

School Years Completed by Persons 18 and Over by Age, Sex, and Race/Ethnicity 1988 123
Occupation of Employed Persons 16 and Over by Years of School Completed and Sex 1988 . 124
Hispanic Employment and Education Level, 1980 and 1987 124
Years of School Completed by Persons 25 and Over and 25-29, by Race 1910-88 125
Persons 18 and Over Who Hold a Bachelor's Degree by Field, Sex, Race & Age, 1984 126
Employed Persons by Detailed Occupation, Sex and Race, 1990 127

General Work Force (continued)
Employed Professionals by Detailed Occupation, Sex, and Race/Ethnicity 1989 131
Doctoral Scientists and Engineers by Field, Sex, and Race/Ethnicity 1987 134
Employed Doctoral Scientists and Engineers by Field, Sex, Race and Citizenship, 1987 135
Employed Scientists and Engineers by Field, Sex and Race/Ethnicity, 1988 136
Employed Recent S/E Master's Graduates by Field, Sex and Race/Ethnicity 1988 137
Blacks Among U.S. Doctorates Awarded 1958-89 by Field 137
Employed Recent S/E Bachelor's Graduates by Field, Sex, and Race/Ethnicity 1988 138
Labor Force Participation & Unemployment Rates of Recent S/E Grads by Field, Sex, & Race .139
Sex and Race/Ethnicity of Doctoral Scientists and Engineers in the U.S., 1973-87 140
Immigrant Scientists and Engineers by Field and Status 1966-88 140
Immigrant Scientists and Engineers by Region of Last Permanent Residence, 1988 141
Disability and Employment Status of Disabled Scientists & Engineers by Field, 1988 142

CHAPTER 5 - ACADEMIC WORK FORCE 143

Doctoral in Academic Institutions 1987 143
Scientists and Engineers by Field, Rank and Sex 144
Scientists and Engineers by Field, Rank and Race/Ethnicity 145

Tenure Status
in Science and Engineering by Field and Sex 147
in Science and Engineering by Field, Sex and Race/Ethnicity 148
in Humanities by Field, Rank and Sex 149
in Humanities by Field, Age Group and Sex 150

Science and Engineering Postdoctorates
by Field and Citizenship 1985-88 151
by Field, Sex, and Race/Ethnicity 1977-87 152
Full-Time Faculty with Tenure by Type of Institution, Rank, Sex & Control 1981-88 153
Women College Presidents by Type and Control of Institution, 1975-1989 154
Full-Time Faculty by Race/Ethnicity, Rank and Sex, Fall 1985 155

Pre-College Teachers
Teachers by Sex, Race/Ethnicity, Subject and Grade Range 155
Characteristics of Public School Teachers by Sex and Race 1971-86 156
Instructional Staff in Elementary and Secondary Public Schools by Sex 1970-90 157

CHAPTER 6 - PHYSICAL AND MATHEMATICAL SCIENCES 158

Physical Sciences
Degrees by Level, Sex and Subfield, 1950-89 158
PhDs by Type of Citizenship 1960-89 161
U.S. Citizens Earning PhDs in Math-Based Fields by Sex, 1978-89 161
Federal Workers by Occupation, Sex and Minority Status 1990 162

Chemistry
PhDs by Subfield and Sex 163
Biochemistry Degrees by Sex and Level, 1973-89 163
PhDs by Citizenship and Visa Type, Sex and Race/Ethnicity 1978-89 164
PhDs who are U.S. Citizens or hold permanent visas, by Race/Ethnicity 165
Chemistry Graduates by Degree Level, ACS Certification and Sex 1971-89 165
ACS Member Chemists by Sex, Minority, Highest Degree and Working in Industry 1989 166

Physics and Astronomy
PhDs by Subfield, Sex, Race/Ethnicity, Citizenship and Visa Type 1960-89 167
Graduate Students by Minority Group and Sex, level and Degree Program 1981-89 170

Geosciences
Degrees by Level, Subfield, Sex, and Race/Ethnicity 1960-89 172
Enrollments in Geoscience Departments by Education Level, Field and Sex, 1981-89 177
Faculty in Geoscience Departments by Sex, Rank, and Highest Degree Awarded, 1987 179

Mathematics and Computer Science
Degrees by Level, Subfield, Sex, Race/Ethnicity, Citizenship 180
Degrees in Statistics by Level 1956-89 186
Employment of New PhDs in Math Sciences by Sex 1987-90 187
Federal Workers in Accounting, Math, Statistics & Computer Specialties by Sex and Race 188

CHAPTER 7 - ENGINEERING AND TECHNOLOGY 189

Degrees Awarded
PhDs by Subfield, Sex, Citizenship, Visa Status 189
by Level, Subfield and Sex, 1950-89 191
by Level and Sex, 1969-90 194
by Level, Sex, Race and Citizenship 1985-90 195
by Sex, Citizenship and Race/Ethnicity 1990 197
by Level, Curriculum, Sex, Race/Ethnicity and Citizenship 1988-90 198
Bachelor's, by Field, Sex, Minority Group and Citizenship 1975-90 201
Leading Schools in Degree Awards to Women 1990 204
Leading Schools in Degree Awards to Minorities, 1990 206
Leading Schools in BS Degree Awards to Blacks 1990 207
Leading Schools in BS Degree Awards to Hispanics 1990 208
Leading Schools in BS Degree Awards to Asians 1990 209
Leading Schools in Degree Awards to Foreign Nationals, by Level, 1990 210

Enrollments
Related to High School Graduates, College Freshmen and Total Enrollments 212
by Level, Sex, Race/Ethnicity and Citizenship 1975-89 213
by Curriculum, Sex, Race/Ethnicity, and Citizenship Fall 1989 215
and Degrees in Nuclear Energy, by Sex, Minority Group, Citizenship and Level 216
and Degrees in Health Physics/Rad. Protection by Sex, Minority Group, Citizenship and Level . 217

Engineering Technology
Degrees Awarded 1971-89 218
Bachelor's Degrees by Curriculum, Sex and Minority Group 1984-90 219
Associate Degrees by Curriculum, Sex and Minority Group 1984-90 220
Enrollments by Level, Sex and Minority Group Fall 1979-89 221
Federal Engineers by Occupation, sex and Minority Status, 1990 222

CHAPTER 8 - AGRICULTURAL, BIOLOGICAL, MEDICAL & HEALTH SCIENCES 223

Agricultural and Biological Sciences
Degrees Awarded 1960-89 223
by Subfield and Sex 223
by Race/Ethnicity to U.S. Citizens 225
by Level, Field and Sex 1950-89 226
by Citizenship and Visa Type 1960-89 229
Federal Workers by Sex and Race/Ethnicity 1990 230

Health Sciences
PhDs by Subfield and Sex 1960-89 231

Medicine
Applicants, Enrollments and Graduates by Sex 1968-1990 232
Enrollments by Race/Ethnicity 1971-90 233
Students Repeating Classes by Race/Ethnicity 1973-87 234
Degrees Awarded to Women by Race/Ethnicity 1980-90 235
Medical Schgool Faculty by Sex and Ethnic Origin 1975-88 235
Minority Graduates 1970-90 236
Enrollments and Graduates by Sex, 1914-90 236
Percent Women in Medical Specialties 1986 237
Health Personnel by Occupation and Sex, 1988 and Projected to 2020 237

Dentistry
Applicants, Enrollments and Graduates by Sex and Race/Ethnicity 1969-1989 238
Faculty by Work Type, Minority Group and Sex 239

Pharmacy
Degrees Awarded by Sex, Level, and Race/Ethnicity 1969-89 239
Enrollments by Sex and Minority Group 1969-90 241

Optometry
Enrollments and Degrees by Sex and Race/Ethnicity 1973-90 243

Osteopathy
Applicants, Enrollments and Graduates by Sex 244
Chiropractors by Sex 1978-88 244

Podiatry
Enrollments and Graduates by Sex and Minority Group 244

Nursing
Degrees by Sex and Level, 1970-89 246
Registered Nurses by Type of Education, Race/Ethnicity and Employment Status 246

Veterinary Medicine
Enrollments and Graduates by Sex and Minority Group 1969-90 247
Faculty, 1987-90 248
Veterinarians by Sex and Type of Employment 248

Federal Workers in Medical and Health Sciences by Sex and Minority Status 1990 251
Speech/Language Pathology and Audiology Degrees by Sex and Level 1971-89 252
Health Services Administration Degrees by Sex and Level 1969-89 252
Medical Lab Technologies Degrees by Sex and Level 1969-89 253
Physical Therapy Degrees by Sex and Level 1969-89 253

CHAPTER 9 - SOCIAL AND BEHAVIORAL SCIENCES 252

Degrees Awarded
Doctorates by Subfield and Sex 1960-89 252
by Level, Subfield and Sex 1950-89 253
Doctorates by Citizenship and Race/Ethnicity 1973-89 256
in Social Work, by Level and Sex 1971-89 257
in Psychology, by Level and Sex 1966-89 258
Faculty in Graduate Departments of Psychology by Sex, Race/Ethnicity, 1990 258
Federal Workers by Title, Sex and Race/Ethnicity, 1990 259

CHAPTER 10 - ARTS, HUMANITIES AND EDUCATION 260

Degrees Awarded
PhDs in the Arts and Humanities by Subfield and Sex, 1920-89 260
in Linguistics, by Sex and Level 1956-89 261

Education
Degrees in Education, by Sex and Level 1971-89 261
PhDs in Education by Subfield and Sex, 1960-89 262
Federal Workers in Education by Title, Sex, and Race/Ethnicity, 1990 263

LIST OF CHARTS

CHART NO.	TITLE	PAGE NO.
1-1	International Achievement Test Rank for Twelfth Graders in Mathematics Fields	13
1-2	Percent of Merit Scholars Electing Natural S/E Majors by Sex 1982-88	17
1-3	Minorities as a Percentage of College Enrollment, by State 1988	22
1-4	Freshman Plans for Science/Engineering Majors, 1975-1989	31
2-1	Women as a Percent of All and S/E PhDs, 1920-29 - 1980-89	53
2-2	Percent Women S/E PhDs by Field, 1950-1989	54
2-3	Science and Engineering PhDs by Citizenship & Visa Type 1960-89	55
2-4	Total U.S. Natural S/E PhDs by Sex 1975-1989	59
2-5	Science and Engineering PhDs by Citizenship and Visa Type, 1960-89	71
2-6	Full Time S/E Graduate Student Support, by Sex and Type of Support 1980-88	81
2-7	Percent Women Among Graduates by Field and Degree 1988	87
3-1	Percent Women Earning First Professional Degrees, 1987 & 1989	120
5-1	Tenure Status of PhD S/Es in Academe by Sex , 1979, 1987	147
6-1	Percent Women PhD Chemistry Degrees and Tenure Track Faculty, 1970, 1987	166
6-2	Percent of Physical Science MS Degrees Awarded to Women, by Degree Type 1966-88	174
6-3	Women Faculty in Graduate Degree Granting Geoscience Departments by Rank, 1964-86	179
6-4	Percent Women Among Math Science Graduates, by Race/Ethnicity & Citizenship	186
7-1	U.S. White Women and Minority PhDs by Sex in Engineering 1975-1989	189
7-2	Citizenship of Engineering PhD Recipients 1960-1989	190
7-3	Percent Women Among Engineering Graduates by Level, 1989-90	194
7-4	Engineering Bachelor's Degrees by Sex and Race/Ethnicity, 1976-1990	196
7-5	Freshman Enrollment in Engineering by Sex 1972-89	212
10-1	Education PhD Awards to Minorities, 1975-1988	263

FOREWORD

This book is designed to provide current and historical data about the professional segment of the U.S. population, and particularly, the participation and availability of women and members of racial and ethnic minorities in those areas which generally require formal education to at least the baccalaureate level. Because more information is available in some fields than in others, the comprehensiveness of coverage varies. Although we have tried to locate all available data sources, and to provide the most current data available, we welcome information that we may have missed. Between annual editions of this report, new data are published regularly in ***MANPOWER COMMENTS,*** a periodical digest available from the Commission on Professionals in Science and Technology.

We wish to thank those professional associations, women's groups and individuals who have responded to our request for current information or data, and for their permission to use that data in this compilation. We also express our appreciation to the more than 2,500 users of earlier editions for their continued interest in the data both to measure their progress and to formulate plans. Special thanks go to Richard C. Vetter, without whose assistance in preparing tables this edition would not have been possible.

Betty M. Vetter

INTRODUCTION

Organization of the book

The data tables are organized in ten chapters, with both tables and charts numbered consecutively within each chapter.

The **Table of Contents** outlines both the chapter arrangement and the organization of tables within the chapter. The first five chapters on general enrollments, degrees, professions, and the general and academic workforce include both tables which do not specify subject fields and tables where several subject fields are included. In the section on the professions, data for some of the individual professions (law, business administration) follow tables including data for multiple fields. Further information on medical and health fields are in the second half of Chapter VIII, following the biological and agricultural sciences.

Tables in chapters six through ten, which are devoted to subject fields, first provide data on degrees (doctorates first); followed by enrollments, general, academic, and finally the federal workforce. Except for tables which include both sex and minority breakouts, those which delineate the population by sex generally precede those which delineate by minority status.

The **Index** is by page number. The Index, rather than the Table of Contents, is the place to begin a search for data in a particular field, since enrollment, degree and employment information about that field may occur throughout the book. Cross indexing allows you to find the data references in a number of ways.

More than 200 published and previously unpublished data sources were used to prepare the statistical tables and charts in this book, including reports and other materials from government agencies, professional associations and women's and/or minority groups and caucuses. The data source for each table is listed above the table. More complete information about the sources will be found in the Bibliography beginning on page 264. The bibliography is organized alphabetically by publisher.

Generally, data from one survey does not correlate exactly with that from a different survey because of different definitions used by the surveyors, different samples, different sampling times, and different types of respondents. For example, degree data collected by the Center for Education Statistics is obtained from college and university registrars, while that collected by the National Research Council comes from the doctorate recipients themselves, and that collected by the Engineering Manpower Commission comes from the Deans of Engineering. Thus, while degree data will be similar, it is not identical from one source to another, usually because of differences in field taxonomy.

Different methods of analysis, particularly in data on minorities, also will produce different statistical results. The several problems for the data analyst include the method of treatment of non-respondents, the respondents who list multiple minority status, responses from a third party rather than from the individuals themselves, inclusion or exclusion of non-citizens in the survey population or unrepresentative population samples. Differences in treatment of non-respondents to questions of sex or ethnicity result in large statistical differences calculating the proportion of minorities or women within a particular population.

Some surveys assume that non-respondents to the sex or ethnic question are in the same proportion as respondents, and remove all non-respondents before calculating the percentage of women and minority participants. Others calculate percentages from a total which includes non-respondents, thus giving a lower percentage for minorities than may be the case. Additionally, many studies dealing with minority populations do not separate foreign nationals from U.S. citizens. This single factor, particularly within the Asian minority among doctoral level scientists and engineers, changes the sex and minority proportion substantially, as does the inclusion of foreign nationals in the base numbers for enrollments and degrees in such graduate fields as engineering. This edition includes more data than were previously available on citizenship, particularly in the science and engineering fields. Table titles designate inclusion of U.S. Citizens only, or of total population.

In most data sets, minority data are not available by sex, and conversely, data on women generally fail to distinguish majority from minority women. Thus the availability of minority women in specific fields may be difficult to determine. Where available, both the sex and minority breakouts are given.

Correlating Degree and Workforce Data

There are large differences between the proportions of degrees awarded to women and minorities in any particular field and the proportions of those persons in the work force for that field. This may occur because of the later entry of women into a large male working population, field switching, differences in nomenclature between degree fields and job titles, and because of the problems of similar but non-identical population bases outlined above. The lower proportion of women in a working population than their proportion of earned degrees over time may also indicate that proportionally more women than men have left the workforce in that field, either temporarily or permanently. Some data sets show that women are somewhat less likely than men to find employment that is linked with their major field of study, particularly among recent graduates.

Few statistics are available on the workforce participation of women and minorities in the arts, humanities and education. Persons with degrees in those fields may appear in almost any workforce occupation, and are generally classed in the degree field only when they are in the academic workforce.

This book incorporates both historical and current data so that progress may be measured and changing trend lines incorporated in manpower planning for the future. In some cases, we have included older data because nothing more current was available. However, because so much new degree information is included, this edition has dropped tables from previous editions where no new data were available.

Through the wording of table titles and the use of footnotes, we have tried to provide as much information as possible regarding the inclusiveness of the data in each table. Usually a more comprehensive explanation of methodology can be found in the original data source, which is listed in the Bibliography. Because of space, we have used a few conventions to designate which fields are included or excluded in a combined set. Most importantly in the science area, S/E means all science and engineering, NS/E means natural sciences and engineering, excluding the social and behavioral sciences.

Terminology for Minority Groups

A common set of designations for minority populations is recent. In this book, tables generally use the terminology of the original source from which the table was derived. When possible, the "Hispanic" population is separated into its several component groups.

AFFIRMATIVE ACTION

Federal laws and regulations prohibit discrimination in conditions of employment including recruitment, hiring, lay-off, discharge and recall, and in-service training; opportunities for promotion; participation in training programs; wages and salaries; sick leave time and pay; vacation time and pay; over-time work and pay; medical, hospital, life and accident insurance; and optional and compulsory retirement.

Statutes and Orders Requiring Equal Employment Opportunity and Affirmative Action

The Equal Pay Act of 1963, the first sex discrimination legislation enacted, requires equal pay for equal work regardless of sex. Title IX of the Education Amendments Act of 1972 extends the coverage to executive, administrative and professional employees in programs receiving federal funds.

Executive Order 11246 as amended by Executive Orders 11357 and 12086 prohibits discrimination in employment by all employers who hold federal contracts, and requires affirmative action programs by all federal contractors and sub-contractors. Firms with contracts over $100,000 and with 100 or more employees must develop and implement written programs of affirmative action.

Title VI of the Civil Rights Act of 1964 forbids discrimination against students on the basis of race, color or national origin in all federally assisted programs. Title VII. as amended by the Equal Employment Opportunity Act of 1972 forbids discrimination on the basis of race, color, national origin, religion or sex in any term, condition or privilege of employment, including sexual harassment, by unions, employment agencies and employers. The law was amended on March 24 1972 to cover all public and private educational institutions as well as state and local governments. It applies to all employers, public or private, whether or not they receive federal funds.

Title IX of the Education Amendments of 1972 forbids discrimination on the basis of sex in all federally assisted education programs in all institutions, public and private, that receive federal monies through grants, loans or contracts. The Supreme Court determined in the spring of 1982 that Title IX's prohibition of sex discrimination applies to both students and employees of educational institutions. Title IX Regulations were broadly applied to activities "assisted or benefitted by federal funds," but the Supreme Court ruled in March 1984 that Title IX applies only to programs or activities that receive direct federal support, rather than to entire institutions.

The Civil Rights Restoration Act, passed over President Reagan's veto on March 22 1988, extended coverage of the four federal civil rights statutes: Title IX of the Education Amendments of 1972, Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975. The 1990 Civil Rights Act which would have reversed or modified six recent Supreme Court rulings that made it more difficult for women and members of minority groups to win job discrimination suits, was vetoed by President Bush, and the veto was upheld by one Senate vote.

Section 504 of the Vocational Rehabilitation Act of 1973, which bars discrimination against handicapped persons by federal contractors, and requires them to take affirmative action to hire such persons, is now supplemented by the Americans with Disabilities Act, which requires that new and renovated buildings be made accessible to persons in wheel chairs as well as to those with vision and hearing disabilities.

Regulation and Enforcement

As of 1978, the Equal Employment Opportunity Commission became the principal agency responsible for enforcement of all public and private non-federal employers and unions and within the federal government, including enforcement of the Equal Pay Act and the Age Discrimination Act.

Enforcement of Executive Order 11246 as amended remains with the Office of Federal Contract Compliance Programs (OFCCP) of the Department of Labor. All federal contractors deal with OFCCP.

The Justice Department is responsible for litigation against state and local governments under Title VII, and represents the government in suits against federal contractors. The Attorney General may initiate "pattern and practice" suits under Title VII in the public sector.

The Department of Education enforces compliance with Title IX.

What is Affirmative Action

Broadly speaking, affirmative action consists of actions to end discrimination and to remedy the effects of past discrimination. It includes such activities as notifying women's and minority groups about job openings, advertising job openings rather than relying on word-of-mouth notification, developing recruitment procedures aimed at women and minorities as well as other qualified applicants, and providing equal opportunities for advancement. Under Executive Order 11246, an Affirmative Action Plan must be prepared, which includes numerical goals and time tables for increasing the participation of women and/or minorities.

Goals are targets for the inclusion of people previously excluded, and are an attempt to estimate the composition of the employer's workforce if there were no illegal discrimination based on race or sex. In general, goals for professional positions are aligned with the number or percentage of qualified women or minorities available rather than with their general representation within the population.

Quotas, on the other hand, are illegal unless assigned by a court as the rest of a finding of discrimination,

since they are in themselves discriminatory and act to keep some qualified people out of the applicant pool to be considered.

Under the Executive Order, all job classifications must be reviewed in order to identify under-utilization of women or minorities. Data should be provided simultaneously on race and sex. If current recruitment practices have resulted in a "significantly lower representation" of women and minorities in the applicant pool than would be expected from their availability in the labor force, then new sources of recruitment must be developed. An employer is assumed to be utilizing "reasonable" numbers of persons in protected classes if his workforce includes at least 80 percent of their representation within the eligible populations.

Affirmative action plans are required to include a system of accountability and monitoring. This system may be centralized in an institution-wide or a corporation-wide office which maintains records and monitors individual units or departments and makes an annual report; or in individual units or departments which may maintain records separately of all applicants and hires as well as records of the efforts made to recruit women and minorities. In either case, records should allow for an ongoing analysis of all employment decisions in recruiting, hiring, promoting and setting salaries.

The employer sets the criteria for every job, in terms of the level of academic preparation required, experience and other factors. The criteria must be applied equally to men and women and to those of all ethnic backgrounds. They must be clearly related to the job to be filled, and they must not in themselves be discriminatory.

The Uniform Guidelines on Employee Selection Procedures protect the rights of workers to be hired and promoted on the basis of job-related standards and without regard to race, sex or national origin. These guidelines apply to all employers, public and private, including academic institutions. Their underlying principle is that tests and other selection procedures that have an adverse impact on minorities and women are illegal unless validated by showing a clear relation between performance on the test and performance on the job. The guidelines adopt a "rule of thumb" as a practical but not absolute means of determining whether there has been an adverse impact. Generally, a selection rate for any race, sex or ethnic group which is less than 80% of the rate for the group with the highest selection rate may be regarded as adverse impact. For professional positions in which women or minorities represent less than 20% of the available pool, statistical evidence of such proportions will be necessary.

No evidence of the validity of a selection procedure is required if there is no adverse impact. The guidelines provide that, in considering whether to take enforcement action, the government will take into account the general posture of the employer regarding equal employment opportunity, including its affirmative action plan and the results achieved under the plan.

Numerical goals have been upheld in the courts as relief for a substantiated pattern of discrimination. Each goal is tailor-made to a specific situation, taking into account expected turnover, vacancies, promotions and the availability of qualified women and minorities. The goal varies for different job classifications and may be general as for "chemists" or more specific as for "doctoral organic chemists."

If an institution fails to meet its goals, and if adverse impact on women or minorities is indicated by its results, that institution must show that it has made a good faith effort to recruit, hire and promote qualified women and minorities, and it must be able to produce records to document those efforts.

If the best qualified person is white and male, that person can be hired. However, if called upon to do so, the employer must be able to demonstrate that a genuine good faith effort has been made to recruit qualified women and minorities; that objective, job-related criteria were specified before the hiring process; and that these criteria have been applied equally to women, minorities and white men.

SOURCE: National Center for Health Statistics, personal communications and Monthly Vital Statistics Report vol. 38, no. 3, Suplement, June 29, 1989

TABLE 1-1

LIVE BIRTHS IN THE U.S. BY SEX AND RACE: 1937 – 1988

Year	Total	Yearly Change No.	Yearly Change %	Male	Female
1933	2,081,232	0	0	1,068,871	1,012,361
1934	2,167,636	86,404	4.15	1,112,703	1,054,933
1935	2,155,105	(12,531)	-0.58	1,105,489	1,049,616
1936	2,144,790	(10,315)	-0.48	1,099,465	1,045,325
1937	2,203,337	58,547	2.73	1,130,641	1,072,696
1938	2,286,962	83,625	3.80	1,172,541	1,114,421
1939	2,265,558	(21,404)	-0.94	1,162,600	1,102,958
1940	2,360,399	94,841	4.19	1,211,684	1,148,715
1941	2,513,427	153,028	6.48	1,289,734	1,223,693
1942	2,808,996	295,569	11.76	1,444,365	1,364,631
1943	2,936,860	127,864	4.55	1,508,959	1,427,901
1944	2,794,800	(142,060)	-4.84	1,435,301	1,359,499
1945	2,735,456	(59,344)	-2.12	1,404,587	1,330,869
1946	3,288,672	553,216	20.22	1,691,220	1,597,452
1947	3,699,940	411,268	12.51	1,899,876	1,800,064
1948	3,535,068	(164,872)	-4.46	1,813,852	1,721,216
1949	3,559,529	24,461	0.69	1,826,352	1,733,177
1950	3,554,149	(5,380)	-0.15	1,823,555	1,730,594
1951	3,750,850	196,701	5.53	1,923,020	1,827,830
1952	3,846,986	96,136	2.56	1,971,262	1,875,724
1953	3,902,120	55,134	1.43	2,001,798	1,900,322
1954	4,017,362	115,242	2.95	2,059,068	1,958,294
1955	4,047,295	29,933	0.75	2,073,719	1,973,576
1956	4,163,090	115,795	2.86	2,133,588	2,029,502
1957	4,254,784	91,694	2.20	2,179,960	2,074,824
1958	4,203,812	(50,972)	-1.20	2,152,546	2,051,266
1959	4,244,796	40,984	0.97	2,173,638	2,071,158
1960	4,257,850	13,054	0.31	2,179,708	2,078,142
1961	4,268,326	10,476	0.25	2,186,274	2,082,052
1962	4,167,362	(100,964)	-2.37	2,132,466	2,034,896
1963	4,098,020	(69,342)	-1.66	2,101,632	1,996,388
1964	4,027,490	(70,530)	-1.72	2,060,162	1,967,328
1965	3,760,358	(267,132)	-6.63	1,927,054	1,833,304
1966	3,606,274	(154,084)	-4.10	1,845,862	1,760,412
1967	3,520,959	(85,315)	-2.37	1,803,388	1,717,571
1968	3,501,564	(19,395)	-0.55	1,796,326	1,705,238
1969	3,600,206	98,642	2.82	1,846,572	1,753,634
1970	3,731,386	131,180	3.64	1,915,378	1,816,008
1971	3,555,970	(175,416)	-4.70	1,822,810	1,733,160
1972	3,258,411	(297,559)	-8.37	1,669,927	1,588,484
1973	3,136,965	(121,446)	-3.73	1,608,326	1,528,639
1974	3,159,958	22,993	0.73	1,622,114	1,537,844
1975	3,144,198	(15,760)	-0.50	1,613,135	1,531,063
1976	3,167,788	23,590	0.75	1,624,436	1,543,352
1977	3,326,632	158,844	5.01	1,705,916	1,620,716
1978	3,333,279	6,647	0.20	1,709,394	1,623,885
1979	3,494,398	161,119	4.83	1,791,267	1,703,131
1980	3,612,258	117,860	3.37	1,852,616	1,759,642
1981	3,629,238	16,980	0.47	1,860,272	1,768,966
1982	3,680,537	51,299	1.41	1,885,676	1,794,861
1983	3,638,933	(41,604)	-1.13	1,865,533	1,773,400
1984	3,669,141	30,208	0.83	1,879,490	1,789,651
1985	3,760,561	91,420	2.49	1,927,983	1,832,578
1986	3,756,547	(4,014)	-0.11	1,924,868	1,831,679
1987	3,809,394	52,847	1.41	1,951,153	1,858,241
1988	3,909,510	100,116	2.63	2,002,424	1,907,086

Year	White No.	White %	Black No.	Black %
1960	3,600,744	84.57	602,264	14.14
1961	3,600,864	84.36	611,072	14.32
1962	3,394,068	81.44	584,610	14.03
1963	3,326,344	81.17	580,658	14.17
1964	3,369,160	83.65	607,556	15.09
1965	3,123,860	83.07	581,126	15.45
1966	2,993,230	83.00	558,244	15.48
1967	2,922,502	83.00	543,976	15.45
1968	2,912,224	83.17	531,152	15.17
1969	2,993,614	83.15	543,132	15.09
1970	3,091,264	82.84	572,362	15.34
1971	2,919,746	82.11	564,960	15.89
1972	2,655,558	81.50	531,329	16.31
1973	2,551,303	81.33	512,597	16.34
1974	2,575,792	81.51	507,162	16.05
1975	2,551,996	81.17	511,581	16.27
1976	2,567,614	81.05	514,479	16.24
1977	2,691,070	80.89	544,221	16.36
1978	2,681,116	80.43	551,540	16.55
1979	2,808,420	80.37	577,855	16.54
1980	2,898,732	80.25	589,616	16.32
1981	2,908,669	80.15	586,027	16.15
1982	2,942,054	79.94	592,641	16.10
1983	2,904,250	79.81	586,027	16.10
1984	2,923,502	79.68	592,745	16.15
1985	2,991,373	79.55	608,193	16.17
1986	2,970,439	79.07	621,221	16.54
1987	2,992,488	78.56	641,567	16.84
1988	3,046,162	77.92	671,976	17.19

SOURCE: 1980 Census of Population, Supplementary Report, May 1981, U.S. Dept. of Commerce, U.S. Bureau of the Census; Asian Americans: Growth, Change and Diversity, Population Reference Bureau, 1985; Special Report of Hispanics, 1987, Bureau of Cencus, and personal communication.

TABLE 1-2

U.S. POPULATION, 1980 AND ESTIMATED 1986* AND COLLEGE ENROLLMENT

	1980 U.S. Population No.	%	Current * U.S. Population No.	%	% of 20–24 Yr. Olds in Each Group in College in 1985
Total U.S.	226,610	100.0	241,752	100.0	24
White +	188,341	83.1	199,117	82.4	24
Black	26,488	11.7	28,930	12.0	20
Hispanic	14,604	6.4	18,790	7.8	16
Mexican	8,679	3.8	11,762	4.9	
Puerto Rican	2,005	0.9	2,284	0.9	
Cuban	806	0.4	1,017	0.4	
Central or South Am.		0.0	2,139	0.9	
Other	3,114	1.4	1,588	0.7	
Indian/Alaskan Native	1,418	0.6	1,507	0.6	
Asian/Pacific Islander	3,606	1.6	5,148	2.1	
Chinese	812	0.4	1,079	0.4	60
Filippino	782	0.3	1,052	0.4	27
Japanese	716	0.3	766	0.3	48
Vietnamese	245	0.1	634	0.3	42
Korean	357	0.2	543	0.2	40
Asian Indian	387	0.2	526	0.2	
Laotian	48	0.0	218	0.1	
Cambodian	16	0.0	161	0.1	
Hawaiian	172	0.1		0.0	
Samoan	40	0.0		0.0	
Guamanian	31	0.0		0.0	
Other			169	0.1	
Other Minority #	6,757	3.0	7,050	2.9	

* Data estimates are for various years from 1984 through 1988.

+ Non-Hispanic. # Includes Nonresident Aliens.

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 1-3

ESTIMATES OF RESIDENT POPULATION, BY AGE GROUP ON JULY 1, 1960-1987

[in thousands]

Year	Total, all ages	Total, 3 to 34 years	3 and 4 years	5 and 6 years	7 to 13 years	14 to 17 years	18 and 19 years	20 and 21 years	22 to 24 years	25 to 29 years	30 to 34 years
1	2	3	4	5	6	7	8	9	10	11	12
1960	179,979	90,722	8,063	7,811	25,155	11,211	4,886	4,443	6,425	10,823	11,905
1961	182,992	92,597	8,207	7,924	25,293	12,046	5,411	4,635	6,587	10,756	11,738
1962	185,771	94,396	8,190	8,108	25,790	12,751	5,617	4,943	6,710	10,740	11,547
1963	188,483	96,275	8,152	8,251	26,326	13,492	5,461	5,467	6,930	10,848	11,348
1964	191,141	98,281	8,206	8,233	27,011	14,264	5,429	5,685	7,258	11,051	11,144
1965	193,526	100,210	8,190	8,190	27,563	14,146	6,450	5,503	7,902	11,226	11,040
1966	195,576	101,993	8,031	8,251	28,032	14,398	7,183	5,417	8,198	11,521	10,962
1967	197,457	103,635	7,888	8,237	28,392	14,727	6,928	6,289	8,278	11,943	10,953
1968	199,399	105,363	7,645	8,074	28,732	15,170	6,988	6,972	8,082	12,624	11,076
1969	201,385	106,931	7,253	7,930	28,907	15,549	7,119	6,787	8,980	13,119	11,287
1970	203,984	108,653	6,962	7,703	28,969	15,921	7,410	6,850	9,728	13,604	11,505
1971	206,827	110,482	6,805	7,344	28,892	16,326	7,644	7,106	10,596	13,927	11,842
1972	209,284	112,287	6,789	7,051	28,628	16,637	7,854	7,447	10,418	15,142	12,321
1973	211,357	113,954	6,938	6,888	28,159	16,864	8,044	7,658	10,615	15,694	13,094
1974	213,342	115,641	7,117	6,864	27,599	17,033	8,196	7,893	10,864	16,428	13,644
1975	215,465	117,006	6,912	7,014	26,904	17,125	8,418	8,089	11,228	17,183	14,131
1976	217,563	118,073	6,437	7,194	26,321	17,117	8,604	8,240	11,554	18,177	14,428
1977	219,760	118,853	6,190	6,978	25,878	17,042	8,613	8,456	11,856	18,180	15,661
1978	222,095	119,414	6,208	6,499	25,593	16,944	8,617	8,628	12,120	18,585	16,218
1979	224,567	120,126	6,252	6,256	25,174	16,610	8,698	8,653	12,443	19,077	16,961
1980	227,255	121,149	6,369	6,293	24,803	16,140	8,713	8,664	12,716	19,697	17,754
1981	229,637	122,057	6,551	6,327	24,428	15,599	8,553	8,723	12,892	20,200	18,786
1982	231,996	121,916	6,689	6,429	24,184	15,040	8,425	8,700	12,887	20,753	18,808
1983	234,284	122,158	6,924	6,606	23,803	14,720	8,204	8,551	12,938	21,202	19,211
1984	236,477	122,422	7,104	6,742	23,495	14,705	7,818	8,424	12,903	21,535	19,696
1985	238,736	122,715	7,212	6,976	23,135	14,865	7,500	8,186	12,814	21,758	20,269
1986	241,096	122,934	7,275	7,160	23,190	14,797	7,322	7,808	12,603	22,005	20,774
1987	243,400	122,940	7,228	7,263	23,560	14,467	7,315	7,491	12,301	21,980	21,335

NOTE —Some data have been revised from previously published figures.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-25, No. 519, No. 917, No. 1000, and No. 1022. (This table was prepared September 1988.)

SOURCE: U.S. Bureau of the Census, National Center for Educaton Statistics, Commission on Professionals in Science and Technology

TABLE 1-4

PERCENTAGE OF WOMEN AND U.S. MINORITIES IN VARIOUS POPULATION GROUPS

	Women	White*	Black	Hispanic	Asian	Indian	Foreign
U.S. Population (1986)	51.8	77.5	12.0	7.8	2.1	0.6	
Elemntary/Secondary Enrollment (1986)	50.0	70.3	16.1	9.9	2.8	0.9	
High School Graduates (1987)	51.7	77.1	12.3	6.6	3.2	0.8	
Undergraduate Enrollment (1989)	52.2	78.7	9.2	5.6	3.9	0.8	1.8
Graduate Enrollment (1989)	52.2	78.4	5.2	2.6	3.1	0.4	10.3
First Prof. Enrollment (1989)	36.6	84.3	4.8	3.4	5.2	0.4	1.9
Total Enrollment (1988)	54.0	78.8	8.7	5.2	3.8	0.7	2.8
Bachelors Degrees (1989)	52.5	84.5	5.7	2.9	3.8	0.4	2.7
S/E Bachelors Degrees (1989)	40.0	81.7	5.3	3.1	5.7	0.4	3.8
Masters Degrees (1989)	51.9	78.1	4.6	2.4	3.5	0.4	11.0
S/E Masters Degrees (1989)	31.8	65.9	2.5	2.1	6.2	0.3	23.0
PhD Degrees (1989)	36.5	72.0	2.8	2.0	3.7	0.3	19.2
S/E PhD Degrees (1989)	29.2	67.8	1.6	1.7	4.4	0.2	24.3

*Non-Hispanic

SOURCE: U.S. Department of Education, *Digest of Education Statistics 1989*

TABLE 1-5

SCHOOL-AGE (AGE 5-17) POPULATION BY RACE AND SEX: JULY 1, 1960 - 1987

[In thousands]

Year	Total			White [2]			Black [2]			Other races [2]		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13
1960	44,176	22,437	21,739	38,366	19,532	18,832	5,366	2,677	2,690	446	228	217
1961	45,263	22,995	22,269	39,220	19,975	19,246	5,575	2,782	2,792	469	238	232
1962	46,648	23,706	22,941	40,352	20,560	19,791	5,802	2,897	2,906	496	251	244
1963	48,070	24,438	23,633	41,524	21,164	20,361	6,025	3,009	3,016	520	264	257
1964	49,509	25,174	24,336	42,692	21,765	20,929	6,272	3,135	3,137	545	275	270
1965	49,900	25,377	24,522	42,891	21,872	21,019	6,440	3,220	3,221	567	285	281
1966	50,681	25,784	24,898	43,469	22,176	21,293	6,619	3,308	3,311	594	300	295
1967	51,357	26,135	25,224	43,969	22,438	21,529	6,768	3,383	3,384	622	314	310
1968	51,974	26,456	25,517	44,422	22,677	21,744	6,903	3,453	3,450	649	325	323
1969	52,386	26,675	25,711	44,697	22,826	21,871	7,016	3,511	3,505	673	338	336
1970	52,593	26,793	25,801	44,783	22,877	21,906	7,108	3,561	3,547	703	355	349
1971	52,562	26,780	25,782	44,644	22,809	21,834	7,182	3,600	3,583	737	371	365
1972	52,316	26,658	25,658	44,336	22,655	21,681	7,211	3,615	3,596	768	388	380
1973	51,910	26,456	25,455	43,898	22,434	21,464	7,213	3,617	3,596	799	405	394
1974	51,498	26,249	25,249	43,454	22,210	21,244	7,213	3,618	3,596	830	420	409
1975	51,044	26,022	25,022	42,950	21,956	20,994	7,199	3,611	3,588	895	456	440
1976	50,633	25,822	24,811	42,477	21,721	20,755	7,208	3,617	3,591	948	483	465
1977	49,897	25,456	24,441	41,737	21,350	20,386	7,167	3,600	3,568	994	506	487
1978	49,038	25,024	24,013	40,883	20,919	19,964	7,116	3,576	3,540	1,039	530	509
1979	48,041	24,524	23,517	39,910	20,427	19,484	7,037	3,538	3,498	1,094	560	536
1980	47,236	24,139	23,098	39,003	19,982	19,020	6,997	3,523	3,472	1,237	634	605
1981	46,353	23,695	22,659	38,118	19,532	18,586	6,924	3,491	3,433	1,310	672	639
1982	45,654	23,345	22,307	37,399	19,167	18,231	6,879	3,472	3,408	1,375	706	668
1983	45,129	23,087	22,042	36,859	18,899	17,960	6,842	3,457	3,384	1,428	733	698
1984	44,943	23,000	21,942	36,596	18,770	17,826	6,847	3,464	3,384	1,499	767	731
1985	44,975	23,026	21,949	36,502	18,727	17,775	6,897	3,493	3,406	1,575	805	768
1986	45,148	23,120	22,028	36,532	18,745	17,786	6,957	3,527	3,431	1,661	848	811
1987	45,290	23,199	22,093	36,528	18,747	17,780	7,021	3,563	3,458	1,741	888	853

TABLE 1-6

PERCENT OF THE POPULATION AGE 3-34 YEARS ENROLLED IN SCHOOL, BY RACE/ETHNICITY, SEX AND AGE: OCTOBER 1987

Sex and age	All races	White	Black	Hispanic origin [2]
1	2	3	4	5
Both sexes				
Total, 3 to 34 years	48.6	47.7	51.7	45.3
3 and 4 years	38.3	38.2	38.8	28.3
5 and 6 years	95.1	94.8	95.8	92.5
7 to 9 years	99.6	99.6	99.7	99.0
10 to 13 years	99.5	99.4	99.8	99.3
14 and 15 years	98.6	98.5	98.3	97.5
16 and 17 years	91.7	91.8	91.5	86.4
18 and 19 years	55.6	55.3	53.2	41.2
20 and 21 years	38.7	39.6	28.7	28.3
22 to 24 years	17.5	17.3	15.0	12.6
25 to 29 years	9.0	8.7	9.3	8.1
30 to 34 years	5.8	5.7	6.0	4.4
Male				
Total, 3 to 34 years	49.8	48.8	54.0	45.2
3 and 4 years	40.0	39.8	39.0	27.7
5 and 6 years	95.7	95.2	97.4	93.6
7 to 9 years	99.7	99.6	100.0	99.4
10 to 13 years	99.7	99.7	99.8	100.0
14 and 15 years	98.7	98.8	98.1	99.4
16 and 17 years	92.3	92.5	91.8	91.0
18 and 19 years	57.9	57.3	58.7	44.4
20 and 21 years	41.2	42.1	30.3	30.1
22 to 24 years	18.7	18.4	15.5	10.6
25 to 29 years	9.1	8.6	8.4	8.3
30 to 34 years	5.0	5.0	3.4	3.7
Female				
Total, 3 to 34 years	47.4	46.7	49.6	45.4
3 and 4 years	36.5	36.4	34.4	28.9
5 and 6 years	94.5	94.4	94.1	91.2
7 to 9 years	99.5	99.5	99.3	98.7
10 to 13 years	99.2	99.1	99.7	98.6
14 and 15 years	98.4	98.3	98.6	95.2
16 and 17 years	91.1	91.0	91.2	81.8
18 and 19 years	53.4	53.3	48.2	38.6
20 and 21 years	36.4	37.3	27.4	25.6
22 to 24 years	16.4	16.2	14.6	14.7
25 to 29 years	9.0	8.7	10.0	7.9
30 to 34 years	6.7	6.4	8.1	5.1

TABLE 1-7

HIGH SCHOOL GRADUATES COMPARED WITH POPULATION AGE 17: 1969-70 - 1988-89

[Numbers in thousands]

School year	Population 17 years old [1]	High school graduates					Graduates as a percent of 17-year-old population
		Total [2]	Sex		Control		
			Men	Women	Public [3]	Private [4]	
1	2	3	4	5	6	7	8
1869-70	815	16	7	9	—	—	2.0
1879-80	946	24	11	13	—	—	2.5
1889-90	1,259	44	19	25	22	22	3.5
1899-1900	1,489	95	38	57	62	33	6.4
1909-10	1,786	156	64	93	111	45	8.8
1919-20	1,855	311	124	188	231	80	16.8
1929-30	2,296	667	300	367	592	75	29.0
1939-40	2,403	1,221	579	643	1,143	78	50.8
1947-48	2,261	1,190	563	627	1,073	117	52.6
1949-50	2,034	1,200	571	629	1,063	136	59.0
1951-52	2,086	1,197	569	627	1,056	141	57.4
1953-54	2,135	1,276	613	664	1,129	147	59.8
1955-56	2,242	1,415	680	735	1,252	163	63.1
1956-57	2,272	1,434	690	744	1,270	164	63.1
1957-58	2,325	1,506	725	781	1,332	174	64.8
1958-59	2,458	1,627	784	843	1,435	192	66.2
1959-60	2,672	1,858	895	963	1,627	231	69.5
1960-61	2,892	1,964	955	1,009	1,725	239	67.9
1961-62	2,768	1,918	938	980	1,678	240	69.3
1962-63	2,740	1,943	956	987	1,710	233	70.9
1963-64	2,978	2,283	1,120	1,163	2,008	275	76.7
1964-65	3,684	2,658	1,311	1,347	2,360	298	72.1
1965-66	3,489	2,665	1,323	1,342	2,367	298	76.4
1966-67	3,500	2,672	1,328	1,344	2,374	298	76.3
1967-68	3,532	2,695	1,338	1,357	2,395	300	76.3
1968-69	3,659	2,822	1,399	1,423	2,522	300	77.1
1969-70	3,757	2,889	1,430	1,459	2,589	300	76.9
1970-71	3,872	2,937	1,454	1,483	2,637	300	75.9
1971-72	3,973	3,001	1,487	1,514	2,699	302	75.5
1972-73	4,049	3,036	1,500	1,536	2,730	306	75.0
1973-74	4,132	3,073	1,512	1,561	2,763	310	74.4
1974-75	4,256	3,133	1,542	1,591	2,823	310	73.6
1975-76	4,272	3,148	1,552	1,596	2,837	311	73.7
1976-77	4,272	3,155	1,548	1,607	2,840	315	73.9
1977-78	4,286	3,127	1,531	1,596	2,825	302	73.0
1978-79	4,327	3,117	1,523	1,594	2,817	300	72.0
1979-80	4,262	3,043	1,491	1,552	2,748	295	71.4
1980-81	4,207	3,020	1,483	1,537	2,725	295	71.8
1981-82	4,121	2,995	1,471	1,524	2,705	290	72.7
1982-83	3,939	2,888	1,437	1,451	2,598	290	73.3
1983-84	3,753	2,767	—	—	2,495	272	73.7
1984-85	3,658	2,677	—	—	2,414	263	73.2
1985-86	3,621	2,642	—	—	2,382	260	73.0
1986-87 [5]	3,696	2,698	—	—	2,433	265	73.0
1987-88 [6]	3,779	2,793	—	—	2,493	300	73.9
1988-89 [6]	3,761	2,781	—	—	2,491	291	74.0

[1] Derived from *Current Population Reports*, Series P-25.

[2] Includes graduates of public and private schools.

[3] Data for 1929-30 and preceding years are from *Statistics of Public High Schools* and exclude graduates of high schools which failed to report to the Office of Education.

[4] For most years, private school data have been estimated based on periodic private school surveys. For years through 1957-58, private includes data for subcollegiate departments of institutions of higher education and residential schools for exceptional children.

[5] Data have been revised from previously published figures.

[6] Estimated.

—Data not available.

NOTE.—Includes graduates of regular day school programs. Excludes graduates of other programs, when separately reported, and recipients of high school equivalency certificates. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public High Schools; Biennial Survey of Education in the United States; Statistics of State School Systems; Statistics of Nonpublic Elementary and Secondary Schools*; Common Core of Data surveys; and U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-25. (This table was prepared January 1989.)

SOURCE: The Mathematics Report Card: Are We Measuring Up? and The Science Report Card: Elements of Risk and Recovery Trends and Achievement Based on the 1986 National Assessment, reports no. 17-M-10 and 17-S-01, Educational Testing Service, Princeton N.J., June and September 1988.

TABLE 1-8

TRENDS IN MATHEMATICS PROFICIENCY AND TRENDS IN SCIENCE PROFICIENCY

	Total	Boys	Girls	White	Black	Hisp.
Age 9						
1973		217.7	220.4	224.9	190.0	202.1
1978	218.6	217.4	219.9	224.1	192.4	202.9
1982	219.0	217.1	220.8	224.0	194.9	204.0
1986	221.7	221.7	221.7	226.9	201.6	205.4
Age 13						
1973		265.1	266.9	273.7	227.7	238.8
1978	264.1	263.6	264.7	271.6	229.6	238.0
1982	268.6	269.2	268.0	274.4	240.4	252.4
1986	269.0	270.0	268.0	273.6	249.2	254.3
Age 17						
1973		303.8	300.6	310.1	269.8	277.2
1978	300.4	303.8	297.1	305.9	268.4	276.3
1982	298.5	301.5	295.6	303.7	271.8	276.7
1986	302.0	304.7	299.4	307.5	278.6	283.1

	Total	Boys	Girls	White	Black	Hisp.
Age 9						
1970		227.6	222.7	235.9	178.7	
1973		222.5	218.4	231.1	176.5	
1977	219.9	222.1	217.7	229.6	174.9	191.9
1982	220.9	221.0	220.7	229.1	187.1	189.0
1986	224.3	227.3	221.3	231.9	196.2	199.4
Age 13						
1970		256.8	253.0	263.4	214.9	
1973		251.7	247.1	258.6	205.3	
1977	247.4	251.1	243.8	256.1	208.1	213.4
1982	250.2	255.7	245.0	257.3	217.2	225.5
1986	251.4	256.1	246.9	259.2	221.6	226.1
Age 17						
1970		313.8	296.7	311.8	257.8	
1973		304.3	288.3	303.9	250.4	
1977	289.6	297.1	282.3	297.7	240.3	262.3
1982	283.3	291.9	275.2	293.2	234.8	248.7
1986	288.5	294.9	282.3	297.5	252.8	259.3

SOURCE: The Mathematics Report Card and The Science Report Card, Educational Testing Service, June 1988

TABLE 1-9

WEIGHTED PERCENTAGE OF U.S. 17 YEAR OLD STUDENTS WITH MATH PROFICIENCY AT OR ABOVE SET LEVELS

	Beginning Skills and Understanding			Basic Operations and Beginning Problem Solving			Moderately Complex Procedures and Reasoning			Multi-step Problem Solving and Algebra		
Score Level*	200			250			300			350		
Year	1977-78	1981-82	1985-86	1977-78	1981-82	1985-86	1977-78	1981-82	1985-86	1977-78	1981-82	1985-86
Total	99.8	99.9	99.9	92.1	92.9	96.0	51.4	48.3	51.1	7.4	5.4	6.4
Sex												
Male	99.9	99.9	99.9	93.0	93.9	96.5	54.9	51.9	54.2	9.5	6.7	8.2
Female	99.7	99.9	99.9	91.2	92.0	95.5	48.0	44.9	48.1	5.5	4.1	4.5
Ethnicity/Race												
White	100.0	100.0	99.9	95.8	96.3	98.3	57.3	54.5	58.0	8.6	6.3	7.6
Black	98.7	99.6	100.0	70.0	75.3	86.0	18.0	17.3	21.7	0.4	0.6	0.3
Hispanic	99.3	99.9	98.9	77.4	81.3	90.8	22.1	20.6	26.8	1.1	0.5	1.2

* Score at or above given number

TABLE 1-10

WEIGHTED PERCENTAGE OF U.S. 17 YEAR OLD STUDENTS WITH SCIENCE PROFICIENCY AT OR ABOVE SET LEVELS

	Beginning Skills and Understanding			Applies Basic Scientific Information			Analyzes Scientific Procedures and Data			Integrates Specialized Scientific Information		
Score Level*	200			250			300			350		
Year	1977-78	1981-82	1985-86	1977-78	1981-82	1985-86	1977-78	1981-82	1985-86	1977-78	1981-82	1985-86
Total	97.2	95.8	96.7	81.8	76.8	80.8	41.7	37.5	41.1	8.5	7.2	7.5
Sex												
Male	97.9	96.9	96.9	85.4	81.5	83.1	49.1	45.6	49.3	11.7	11.0	10.3
Female	96.6	94.8	96.6	78.3	72.4	78.5	34.4	29.8	33.8	5.3	3.7	4.7
Ethnicity/Race												
White	99.2	98.7	98.6	88.4	85.0	87.6	47.4	44.0	48.8	9.9	8.8	9.0
Black	92.7	86.1	92.9	61.7	46.6	61.6	19.1	12.5	15.5	2.0	1.4	0.5
Hispanic	84.5	81.0	89.8	40.9	36.5	52.9	8.3	6.7	12.3	0.6	0.1	1.0

* Score at or above given number

SOURCE: Science & Engineering Indicators – 1989, National Science Board

TABLE 1-11

AVERAGE ACHIEVEMENT SCORES OF 13-YEAR-OLD STUDENTS IN MATHEMATICS, BY SEX AND COUNTRY, 1988

Country*	Total	Boys	Girls	Difference
South Korea	567.8	576.7	558.0	18.7
Quebec (French)	543.0	546.3	539.3	7.0
British Columbia	539.8	539.6	541.3	-1.7
Quebec (English)	535.9	534.1	537.3	-3.2
New Brunswick (English)	529.0	526.6	529.0	-2.4
Ontario (English)	516.1	517.8	514.6	3.2
New Brunswick (French)	514.2	516.8	513.4	3.4
Spain	511.7	523.2	499.9	23.3
United Kingdom	509.9	507.0	512.5	-5.5
Ireland	504.3	508.2	499.6	8.6
Ontario (French)	481.5	480.6	482.7	-2.1
United States	473.9	474.6	473.2	1.4

* In decending order of total scores

TABLE 1-12

AVERAGE ACHIEVEMENT SCORES OF 13-YEAR-OLD STUDENTS IN SCIENCE, BY SEX AND COUNTRY, 1988

Country*	Total	Boys	Girls	Difference
British Columbia	551.3	562.3	541.6	20.7
South Korea	549.9	567.5	530.6	36.9
United Kingdom	519.5	524.7	514.9	9.8
Quebec (English)	515.3	525.4	505.7	19.7
Ontario (English)	514.7	524.3	504.7	19.6
Quebec (French)	513.4	523.7	502.1	21.6
New Brunswick (English)	510.5	517.2	502.3	14.9
Spain	503.9	518.0	489.5	28.5
United States	478.5	481.9	474.9	7.0
Ireland	469.3	480.4	456.5	23.9
Ontario (French)	468.3	474.9	463.1	11.8
New Brunswick (French)	468.1	477.4	460.2	17.2

* In decending order of total scores

Source: The Underachieving Curriculum, International Association for the Evaluation of Education Achievement, 1987

TABLE 1-13

TWELFTH GRADE SCORES IN INTERNATIONAL MATHEMATICS ACHIEVEMENT & INTERNATIONAL RANK IN 12TH GRADE SCIENCE STUDENTS, 1986

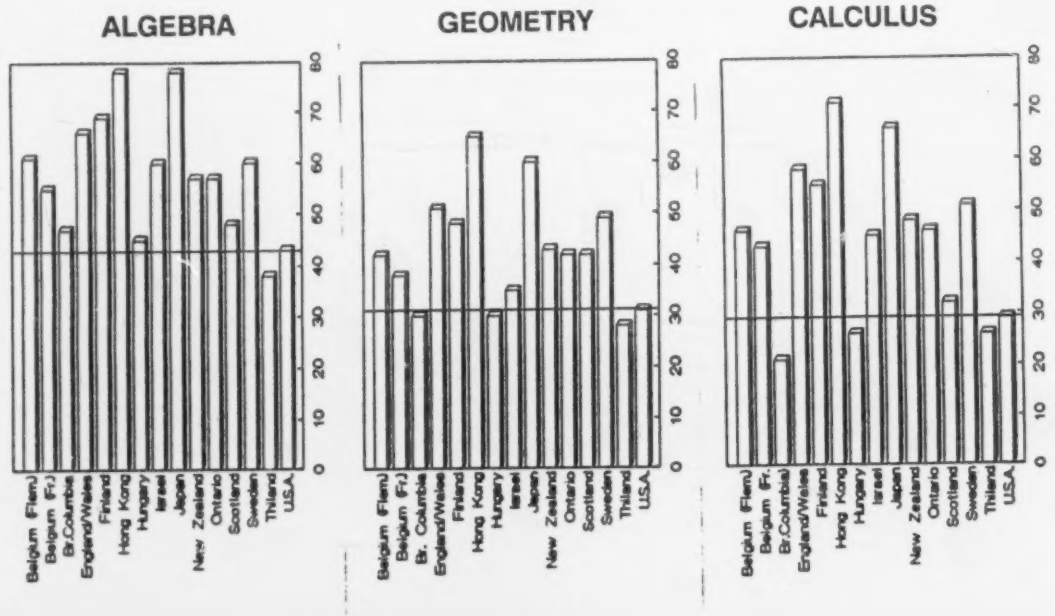
Country	Mathematics Subject		
	Algebra	Geometry	Calculus
Belgium (Flemish)	61	42	46
Belgium (French)	55	38	43
British Columbia	47	30	21
England/Wales	66	51	58
Finland	69	48	55
Hong Kong	78	65	71
Hungary	45	30	26
Israel	60	35	45
Japan	78	60	66
New Zealand	57	43	48
Ontario	57	42	46
Scotland	48	42	32
Sweden	60	49	51
Thiland	38	28	26
U.S.A.	43	31	29

Country	Science Subject		
	Biology	Chemistry	Physics
Australia	5	8	6
Canada(Eng)	4	2	3
England	12	12	12
Finland	7	1	2
Hong Kong	9	13	13
Hungary	11	9	11
Italy	2	4	1
Japan	4	10	10
Norway	8	6	8
Poland	10	7	7
Singapore	13	11	9
Sweden	6	5	4
U.S.A.	1	3	5

Note: In above data, 1 is poorest, 13 is best.

CHART 1-1

INTERNATIONAL ACHIEVEMENT TEST RANK FOR TWELFTH GRADERS IN MATHEMATICS



SOURCE: International Association for the Evaluation of Educational Achievement

SOURCE: U.S. Department of Education, *Digest of Education Statistics 1989*

TABLE 1-14

AVERAGE NUMBER OF CARNEGIE UNITS EARNED BY HIGH SCHOOL GRADUATES, BY VARIOUS CHARACTERISTICS, 1982 AND 1987

Characteristic	Total	English	History/ social studies	Math	Computer science	Science	Foreign language	Vocational education [1]	Arts	Physical education	Other [2]
1	2	3	4	5	6	7	8	9	10	11	12
1982 graduates											
All students	**21.2**	**3.80**	**3.10**	**2.54**	**0.11**	**2.19**	**1.05**	**3.98**	**1.39**	**1.93**	**1.14**
Sex											
Male	21.0	3.76	3.09	2.61	0.13	2.25	0.86	3.91	1.23	2.06	1.06
Female	21.5	3.84	3.12	2.46	0.10	2.13	1.23	4.05	1.55	1.81	1.20
Race											
White	21.4	3.78	3.15	2.59	0.12	2.27	1.13	3.89	1.45	1.89	1.12
Black	20.5	3.90	2.97	2.44	0.10	1.99	0.73	4.15	1.18	1.98	1.07
Hispanic	20.8	3.79	2.94	2.22	0.07	1.79	0.78	4.55	1.27	2.13	1.25
Asian	22.0	3.94	3.04	3.11	0.19	2.56	1.81	2.56	1.22	2.21	1.34
Academic track											
Academic	22.6	4.17	3.52	3.34	0.15	3.01	1.71	2.16	1.39	1.92	1.18
Vocational	20.8	3.48	2.69	1.74	0.06	1.43	0.35	7.54	0.96	1.80	0.78
Both	24.7	4.41	3.74	2.99	0.12	2.58	0.55	6.66	0.89	2.01	0.77
Neither	19.4	3.44	2.71	1.91	0.09	1.53	0.70	3.96	1.70	2.00	1.32
Control											
Public	21.1	3.77	3.05	2.46	0.11	2.14	0.94	4.21	1.42	1.98	0.98
Private	22.7	4.10	3.52	3.15	0.08	2.57	1.95	2.09	1.20	1.50	2.51
1987 graduates											
All students	**23.0**	**4.03**	**3.33**	**2.97**	**0.43**	**2.59**	**1.46**	**3.65**	**1.43**	**1.97**	**1.14**
Sex											
Male	22.9	4.01	3.31	3.03	0.47	2.66	1.29	3.67	1.24	2.13	1.07
Female	23.1	4.05	3.35	2.92	0.40	2.53	1.63	3.64	1.60	1.81	1.21
Race											
White	23.1	3.99	3.30	2.98	0.45	2.64	1.50	3.69	1.48	1.94	1.11
Black	22.5	4.14	3.31	2.90	0.35	2.39	1.12	4.01	1.20	2.01	1.11
Hispanic	22.9	4.23	3.23	2.77	0.36	2.33	1.27	3.57	1.35	2.40	1.37
Asian	24.5	4.31	3.64	3.72	0.57	3.17	2.17	2.08	1.12	2.57	1.14
Academic track											
Academic	23.8	4.24	3.62	3.46	0.50	3.10	1.95	2.23	1.50	1.94	1.21
Vocational	22.1	3.61	2.73	1.99	0.24	1.65	0.49	7.74	0.94	1.91	0.83
Both	24.2	4.22	3.47	3.00	0.34	2.46	0.83	6.40	0.79	1.88	0.79
Neither	20.7	3.57	2.76	2.07	0.40	1.68	0.89	4.08	1.83	2.12	1.29
Control											
Public	22.9	4.01	3.31	2.92	0.43	2.57	1.37	3.88	1.44	2.06	0.94
Private	23.7	4.25	3.53	3.44	0.44	2.81	2.37	1.52	1.26	1.08	2.96

[1] Includes non-occupational vocational education, vocational general introduction, agriculture, business, marketing, health, occupational home economics, trade and industry, and technical courses.

[2] Includes personal and social courses, religion and theology, and all other courses not included in the other subject fields.

NOTE.—The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "1987 High School Transcript Study." (This table was prepared December 1988.)

SOURCE: Admissions Testing Program of the College Entrance Examination Board, *1988 Profiles of SAT and Achievement Test Takers*

TABLE 1-15

PERCENTILE RANKINGS ON THE SAT BY SEX AND RACE/ETHNICITY, 1988

Component and score	Total	Male	Female	White	Black	Asian	Native American	Mexican American	Puerto Rican	Latin American
Verbal										
700-800	1	1	1	1	0	1	0	0	0	0
650-699	2	3	2	3	0	3	1	1	0	1
600-649	4	5	4	5	1	5	2	2	1	3
500-599	20	21	18	23	7	17	11	11	8	13
400-499	33	34	33	36	22	26	33	29	23	27
Mathematics										
700-800	4	6	1	4	0	10	1	1	1	1
650-699	5	7	4	6	1	10	2	2	2	3
600-649	8	10	7	9	2	12	4	4	3	5
500-599	25	27	24	28	11	26	20	19	14	19
400-499	29	27	31	30	25	24	33	33	28	29

TABLE 1-16

PERCENTAGE, SAT SCORES, AND SEX OF COLLEGE-BOUND SENIORS PLANNING SCIENCE/ENGINEERING MAJORS, 1985, 1987 & 1988

Field	Percent of Stud.			SAT-Verbal			Change	SAT-Math			Change	%Female		
	1985	1987	1988	1985	1987	1988	85-88	1985	1987	1988	85-88	'85	'87	'88
Physical Sciences	1.7	1.3	1.3	504	507	500	-4	578	576	568	-10	31%	30%	32%
Mathematics	1.1	0.7	0.6	456	475	468	12	588	602	596	8	51	48	48
Computer/Info Sci	7.1	3.4	3.0	409	403	400	-9	488	476	470	-18	37	35	37
Engineering	11.7	10.1	9.4	453	456	453	0	556	554	547	-9	15	16	17
Biological Sciences	3.1	3.1	3.2	474	476	470	-4	519	517	514	-5	54	54	54
Agric/Nat Res.	1.0	1.2	1.2	394	416	414	20	429	446	447	18	33	42	41
Social Sci/History	8.1	9.9	10.9	463	465	459	-4	480	483	482	2	52	65	65
All Test Takers				431	431	428	-3	475	475	476	1			

TABLE 1-17

SAT SCORE AVERAGES
FOR COLLEGE-BOUND SENIORS BY SEX
1970 – 1990

	VERBAL			MATHEMATICS		
Year	Male	Female	Total	Male	Female	Total
1970	459	461	460	509	465	488
1971	454	457	455	507	466	488
1972	454	452	453	505	461	484
1973	446	443	445	502	460	481
1974	447	442	444	501	459	480
1975	437	431	434	495	449	472
1976	433	430	431	497	446	472
1977	431	427	429	497	445	470
1978	433	425	429	494	444	468
1979	431	423	427	493	443	467
1980	428	420	424	491	443	466
1981	430	418	424	492	443	466
1982	431	421	426	493	443	467
1983	430	420	425	493	445	468
1984	433	420	426	495	449	471
1985	437	425	431	499	452	475
1986	437	426	431	501	451	475
1987	437	425	431	499	452	475
1988	435	422	428	498	455	476
1989	434	421	427	500	454	476
1990	429	419	424	499	455	476

Note: Scores range from 200 to 800.

SOURCE: Admissons Testing Program of the College Board

TABLE 1-18

SAT SCORES BY RACE OR ETHNIC GROUP, 1976 – 1990

	ALL SCORES		WHITE		BLACK		ASIAN		AMER.INDIAN		MEXICAN AM.		PUERTO RICAN		OTHER HISPAN		OTHER	
Year	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math
1976	431	472	451	493	332	354	414	518	388	420	371	410	364	401			410	458
1977	429	470	448	489	330	357	405	514	390	421	370	408	355	397			402	457
1978	429	468	446	485	332	354	401	510	387	419	370	402	349	388			399	450
1979	427	467	444	483	330	358	396	511	386	421	370	410	345	388			393	447
1980	424	466	442	482	330	360	396	509	390	426	372	413	350	394			394	449
1981	424	466	442	483	332	362	397	513	391	425	373	415	353	398			388	447
1982	426	467	444	483	341	366	398	513	388	424	377	416	460	403			392	449
1983	425	468	443	484	339	369	395	514	388	425	375	517	358	403			386	446
1984	426	471	445	487	342	373	398	519	390	427	376	420	358	405			388	450
1985	432	475	449	491	346	376	404	518	392	428	382	426	368	409			391	448
1987	431	476	447	489	351	377	405	521	393	432	379	424	360	400	387	432	405	453
1988	428	476	445	490	353	384	408	522	393	435	382	428	355	402	387	433	410	460
1989	427	476	446	491	351	386	409	525	384	428	381	430	360	406	389	436	414	467
1990	424	476	442	491	352	385	410	528	388	437	380	429	359	405	383	434	410	467

Notes: SAT scores were not available by ethnic group prior to 1976. In 1986, these data were not available due to changes in the student descriptive questionnaire. The "Other Hispanic" category was added in 1987.

SOURCE: American College Testing Program

TABLE 1-19

AVERAGE ACT SCORES BY SEX, RACE AND ACADEMIC PREPARATION, 1987–89

	English			Mathematics			Social Studies			Natural Sciences			Composite		
	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989
Men	17.9	18.0	17.8	18.6	18.4	18.3	18.4	18.4	18.1	22.8	22.8	22.6	19.5	19.6	19.3
Women	18.9	19.0	18.9	16.1	16.1	16.1	16.7	16.6	16.4	20.1	20.2	20.0	18.1	18.1	18.0
Am. Indian	14.6	14.7	14.6	12.5	12.8	12.8	13.2	13.3	13.0	17.8	18.1	17.9	14.6	14.9	14.7
Asian	18.2	18.4	18.5	20.9	21.0	21.2	17.7	17.7	17.9	22.0	22.1	21.9	19.8	19.9	20.0
Black	14.4	14.5	14.4	11.0	11.3	11.6	12.1	12.2	12.0	15.7	15.9	15.7	13.4	13.6	13.6
Mexican-Am.	15.6	15.9	15.6	13.7	14.0	14.1	13.9	14.1	13.7	17.9	18.2	17.8	15.4	15.7	15.4
Other Hispanic	16.7	16.9	16.8	15.5	15.8	15.9	15.5	15.8	15.5	19.3	19.3	19.2	16.9	17.1	17.0
White	19.1	19.2	19.2	18.0	18.0	17.9	18.3	18.3	18.1	22.2	22.3	22.1	19.6	19.6	19.4
Compl. Core*	20.1	20.2	20.1	20.6	20.4	20.2	19.9	19.7	19.5	23.8	23.6	23.3	21.2	21.1	20.9
No Core* Compl.	17.5	17.4	17.0	15.2	14.8	14.6	16.2	15.9	15.4	19.9	19.8	19.5	17.3	17.1	16.7
All	18.4	18.5	18.4	17.2	17.2	17.1	17.5	17.4	17.2	21.4	21.4	21.2	18.7	18.8	18.6

* A Core curriculum includes at least four years of English and at least three years each of mathematics, natural sciences, and social sciences.

SOURCE: Admissions Testing Program of the College Entrance Examination Board, *1988 Profiles of SAT and Achievement Test Takers.*

TABLE 1-20

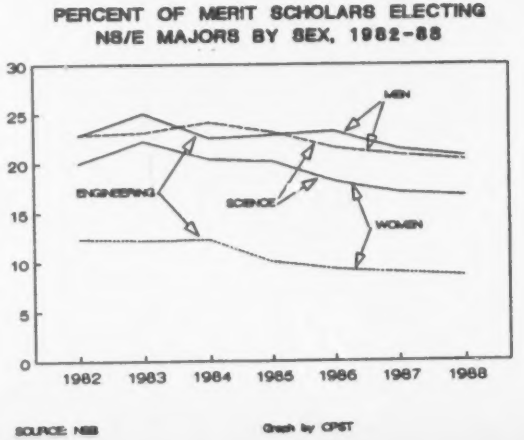
ADVANCED PLACEMENT TEST SCORES IN SCIENCE AND MATH FOR COLLEGE BOUND SENIORS, BY SEX AND RACE/ETHNICITY, 1988

Advanced placement test	Total	Male	Female	White	Black	Asian	Native American	Mexican American	Puerto Rican	Latin American
Biology	3.05	3.23	2.87	3.04	2.17	3.39	2.61	2.31	2.72	2.67
Chemistry	2.94	3.09	2.64	2.94	1.99	3.14	2.64	2.42	2.69	2.38
Physics B	2.85	2.96	2.50	2.85	1.97	2.99	2.12	2.10	3.06	2.58
Physics C-Mechanics	3.29	3.42	2.70	3.31	2.34	3.38	3.00	1.98	2.89	2.73
Physics C-Electricity and Magnetism	3.29	3.37	2.86	3.28	2.69	3.34	3.00	2.06	2.50	3.36
Mathematics/Calculus AB	3.10	3.21	2.95	3.11	2.16	3.34	2.74	2.67	2.47	2.77
Mathematics/Calculus BC	3.53	3.63	3.30	3.50	2.98	3.67	2.64	2.59	3.21	3.18
Computer Science AB	2.56	2.65	2.01	2.64	1.81	2.47	2.12	2.13	1.57	2.04
Computer Science A	2.87	2.99	2.24	2.94	1.95	2.88	2.75	2.45	1.75	2.34

Score range is from 1 to 5:

1 = no recommendation for college credit;
2 = possibly qualified;
3 = qualified;
4 = well qualified;
5 = extremely well qualified.

CHART 1-2



Source: Admissions Testing Program of the College Entrance Examination Board, 1988 Profiles of SAT and Achievement Test Takers, (Princeton, N.J.: Educational Testing Service, 1984 and 1988

TABLE 1-21

SCORES OF COLLEGE-BOUND SENIORS ON ACHIEVEMENT TESTS IN SCIENCE AND MATH, BY SEX AND RACIAL/ETHNIC GROUP, 1984 & 1988

Achievement &	Total			Men			Women			White			Black			Asian			Native Am.			Mexican Am.			Puerto Rican			Latin Amer.
SAT–M tests	'84	'88	Dif.	'84	'88	Dif.	'84	'88	Dif.	'84	'88	Dif.	'84	'88	Dif.	'84	'88	Dif.	'84	'88	Dif.	'84	'88	Dif.	'84	'88	Dif.	1988
Chemistry	573	577	4	586	593	7	550	549	–1	575	578	3	505	514	9	586	588	2	524	542	18	524	522	–2	543	521	–22	556
SAT–M	629	641	12	644	657	13	603	613	10	632	643	11	535	561	26	650	654	4	592	604	12	590	594	4	588	574	–14	609
Biology	550	553	3	570	568	–2	533	539	6	553	556	3	481	489	8	556	554	–2	521	516	–5	491	497	6	517	519	2	539
SAT–M	579	594	15	607	618	11	556	572	16	583	596	13	490	513	23	609	613	4	536	551	15	517	531	14	524	546	22	566
Physics	597	599	2	608	611	3	551	555	4	600	600	0	511	528	17	599	607	8	574	557	–17	546	535	–11	543	535	–8	568
SAT–M	651	662	11	656	668	12	630	640	10	655	667	12	552	583	31	663	667	4	634	617	–17	610	624	14	595	604	9	622
Math. Level I	542	549	7	560	568	8	524	531	7	546	552	6	481	491	10	566	575	9	507	519	12	486	495	9	510	504	–6	515
SAT–M (1)	560	570	10	583	594	11	539	548	9	567	577	10	482	498	16	578	582	4	522	537	15	494	496	2	522	512	–10	525
Math. Level II	659	664	5	671	679	8	638	641	3	661	664	3	577	597	20	674	681	7	614	630	16	603	604	1	621	619	–2	640
SAT–M	650	655	5	664	670	6	626	630	4	655	659	4	563	576	13	655	658	3	609	623	14	594	590	–4	609	603	–6	621

(1) Score on the mathematics portion of the aptitude test.

NOTES: Score range is 200 to 800. Pre–1988 data did not report Latin Americans

SOURCE: Science & Engineering Indicators - 1989, National Science Board

TABLE 1-22

PERCENTAGES OF HIGH SCHOOL GRADUATES EARNING CREDITS IN MATHEMATICS BY SEX
(Note: This and tables below all for 1982 & 1987)

	Total		%	Men		%	Women		%
Course Taken	1982	1987	Change	1982	1987	Change	1982	1987	Change
Any Mathematics	97.4	99.5	2.2	97.6	99.5	1.9	97.3	99.6	2.4
Remedial Mathematics	32.7	24.5	-25.1	35.9	26.4	-26.5	29.6	22.8	-23.0
Algebra 1	65.1	77.2	18.6	63.3	75.0	18.5	66.8	78.5	17.5
Algebra 2	35.1	46.1	31.3	35.3	44.1	24.9	34.9	47.9	37.2
Geometry	45.7	61.0	33.5	45.0	61.1	35.8	46.4	60.8	31.0
Trigonometry	12.0	20.4	70.0	12.9	21.9	69.8	11.3	19.0	68.1
Analysus/pre-Calculus	5.8	12.4	114	6.0	13.5	125	5.5	11.3	105
Calculus	4.7	6.1	29.8	5.3	7.6	43.4	4.2	4.7	11.9
AP Calculus	1.5	3.1	107	1.7	3.5	106	1.3	2.7	108
Statistics/Probability	0.3	0.5	66.7	0.5	0.4	-20.0	0.2	0.6	200

TABLE 1-23

PERCENTAGES OF HIGH SCHOOL GRADUATES EARNING CREDITS IN SCIENCE BY SEX

	Total		%	Men		%	Women		%
Course Taken	1982	1987	Change	1982	1987	Change	1982	1987	Change
Any Science	95.2	99.1	4.1	94.8	98.8	4.2	95.6	99.4	4.0
Biology	75.3	89.6	19.0	73.3	88.5	20.7	77.1	90.8	17.8
AP/Honors Biology	6.6	3.0	-54.5	6.1	3.1	-49.2	7.1	2.8	-60.6
Chemistry	30.8	45.4	47.4	31.7	46.3	46.1	30.0	44.5	48.3
AP/Honors Chemistry	2.9	3.1	6.9	3.5	3.4	-2.9	2.4	2.7	12.5
Physics	13.9	20.1	44.6	18.2	25.3	39.0	10.0	15.0	50.0
AP/Honors Physics	1.1	1.8	63.6	1.4	2.8	100.0	0.7	0.9	28.6
Engineering	0.1	0.1	0.0	0.2	0.2	0.0	0.0	0.1	NCal
Astronomy	1.1	0.8	-27.3	1.2	0.8	-33.3	1.0	0.7	-30.0
Geology	13.9	15.0	7.9	14.8	15.8	6.8	13.0	14.2	9.2

TABLE 1-24

MEAN NUMBER OF CREDITS EARNED BY HIGH SCHOOL GRADUATES IN SCIENCE & MATHEMATICS BY RACE/ETHNICITY

	Science		%	Mathematics		%	Computer Science		%
Race/Ethnicity	1982	1987	Change	1982	1987	Change	1982	1987	Change
White	2.27	2.68	18.1	2.59	2.97	14.7	0.12	0.43	258
Black	1.99	2.41	21.1	2.44	2.92	19.7	0.10	0.36	260
Hispanic	1.79	2.39	33.5	2.22	2.82	27.0	0.07	0.35	400
Asian/Pacific Islander	2.56	3.23	26.2	3.11	3.79	21.9	0.19	0.56	195
Other	2.02	2.57	27.2	2.21	3.01	36.2	0.05	0.31	520

TABLE 1-25

MEAN NUMBER OF CREDITS EARNED BY HIGH SCHOOL GRADUATES IN SELECTED SUBJECTS BY SEX

	Total		%	Men		%	Women		%
Subject	1982	1987	Change	1982	1987	Change	1982	1987	Change
English	3.80	4.05	6.58	3.76	4.03	7.18	3.84	4.07	5.99
History	1.68	1.91	13.7	1.68	1.93	14.9	1.69	1.89	11.8
Social Studies	1.42	1.44	1.41	1.44	1.42	-1.46	1.43	1.47	2.80
Mathematics	2.54	2.98	17.32	2.61	3.04	16.5	2.46	2.93	19.1
Computer Sciencs	0.11	0.42	282	0.13	0.46	254	0.10	0.39	290
Science	2.19	2.63	20.1	2.25	2.69	19.6	2.13	2.57	20.7
Foreign Language	1.05	1.47	40.0	0.86	1.30	51.2	1.23	1.63	32.5

SOURCE: Admissions Testing Program of the College Entrance Examination Board, *1988 Profiles of SAT and Achievement Test Takers.*

TABLE 1-26

INTENDED UNDERGRADUATE MAJORS AND CORRESPONDING SAT MATH SCORES OF COLLEGE-BOUND SENIORS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP, 1988

Area of study	Total	Male	Female	White	Black	Asian	Native American	Mexican American	Puerto Rican	Latin American
	Percent									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Science and engineering	32.1	38.8	26.2	31.3	33.7	38.5	27.9	34.4	33.8	35.5
Biological science	3.5	3.4	3.6	3.5	2.3	4.7	3.2	3.0	3.4	3.4
Agriculture	1.3	1.7	1.0	1.5	0.4	0.4	1.7	0.9	0.9	0.7
Computer science	3.3	4.3	2.3	2.6	7.5	4.8	3.2	3.9	5.4	4.4
Mathematics	0.7	0.7	0.6	0.7	0.4	0.8	0.6	0.5	0.3	0.4
Physical science	1.4	2.1	0.9	1.6	0.6	1.5	1.0	1.0	0.9	1.0
Social science	11.8	8.7	14.4	12.0	12.0	8.0	10.3	13.1	11.3	13.4
Engineering	10.2	17.8	3.4	9.4	10.5	18.4	8.0	12.0	11.7	12.3
Non-science & engineering (1)	67.9	61.2	73.8	68.7	66.3	61.5	72.1	65.6	66.2	64.5
Business	23.1	23.9	22.3	22.7	26.5	22.7	25.3	22.2	22.9	23.3
Education	6.7	3.2	9.8	7.5	4.1	2.6	7.9	5.9	4.2	4.0
	SAT mathematics score (2)									
Total	---	---	---	---	---	---	---	---	---	---
Science and engineering	---	---	---	---	---	---	---	---	---	---
Biological science	514	527	504	522	418	567	462	459	426	461
Agriculture	447	444	452	451	365	474	427	405	408	422
Computer science	470	502	418	509	371	513	433	425	389	414
Mathematics	596	613	577	608	479	605	535	528	535	534
Physical science	568	583	534	575	448	611	496	503	436	519
Social science	482	513	466	496	389	525	442	429	405	440
Engineering	547	550	535	566	443	570	501	491	452	486
Non-science & engineering (1)	---	---	---	---	---	---	---	---	---	---
Business	462	483	443	476	376	492	431	420	395	423
Education	442	452	439	450	354	465	407	397	380	398

SOURCE: Admissions Testing Program of the College Entrance Examination Board, *1988 Profiles of SAT and Achievement Test Takers.*

TABLE 1-27

PERCENTAGE OF COLLEGE BOUND SENIORS WHO TOOK NATURAL SCIENCE, SOCIAL SCIENCE, OR MATHEMATICS COURSEWORK IN HIGH SCHOOL, BY SEX AND RACIAL/ETHNIC GROUP, 1988

Coursework	Percent									
	Total	Male	Female	White	Black	Asian	Native American	Mexican American	Puerto Rican	Latin American
A. Natural science										
Biology	97	96	97	97	96	95	97	96	96	96
Chemistry	78	80	77	80	70	86	70	71	73	76
Physics	42	51	35	43	31	63	30	32	41	42
Honors course	20	21	19	21	12	29	11	18	12	19
B. Social science										
Anthropology	3	3	3	3	2	3	3	2	3	3
Economics	46	46	46	45	49	50	46	69	35	53
Psychology	29	22	35	31	20	22	28	21	22	26
Sociology	17	14	20	18	13	11	17	10	16	14
Honors course	19	19	19	20	13	26	11	17	12	19
C. Mathematics										
Algebra	97	97	97	97	96	96	96	98	95	96
Geometry	93	93	92	94	85	95	89	92	88	92
Trigonometry	55	59	52	57	43	73	43	43	50	54
Precalculus	28	31	25	29	16	45	18	21	24	25
Calculus	18	21	15	18	9	36	9	12	10	16
Honors course	22	24	21	23	13	34	12	20	15	20

SOURCE: The American Freshman: National Norms for Fall 1971 through 1989, Cooperative Institutional Reserach Program, American Council on Education, University of California, Los Angeles

TABLE 1-28

RACIAL BACKGROUND OF FRESHMEN IN ALL INSTITUTIONS OF HIGHER EDUCATION SELECTED YEARS, 1971 –1989

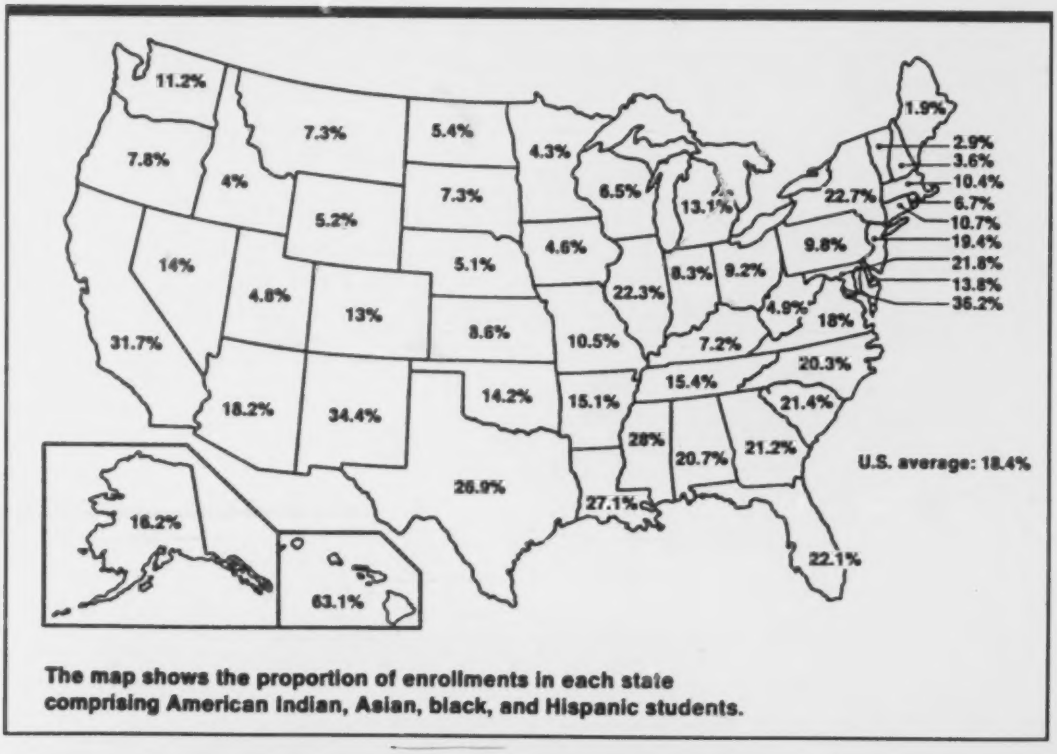
	WHITE		BLACK		AM INDIAN		ASIAN		MEX AMER		PUERTO RICAN		OTHER	
YEAR	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom
1971	92.1	90.6	5.5	7.2	1.0	0.9	0.5	0.4	1.1	1.1	0.2	0.2	1.2	1.1
1973	89.1	87.9	7.0	8.6	0.8	1.0	1.2	1.0	1.3	1.2	0.5	0.4	1.5	1.5
1975	87.2	85.6	8.0	10.1	0.9	0.8	1.6	1.3	1.8	1.6	0.7	0.6	2.1	1.7
1977	87.9	86.0	7.8	9.8	0.8	0.7	1.2	1.0	1.4	1.4	0.9	1.0	1.9	1.6
1979	87.2	85.4	8.2	10.1	1.0	1.0	1.6	1.2	1.1	1.2	1.1	1.0	2.2	1.8
1981	89.5	87.6	7.5	9.6	1.1	1.0	1.2	1.0	0.9	0.9	0.6	0.6	1.8	1.2
1983	88.0	85.9	7.8	10.1	1.0	1.1	1.7	1.4	0.9	0.9	0.7	0.7	1.8	1.5
1984	86.9	84.6	8.6	10.9	1.0	0.9	1.8	1.5	0.9	1.1	0.8	0.8	1.7	1.7
1985	87.3	87.3	8.1	10.0	1.0	1.1	2.1	1.8	1.0	1.4	0.6	0.7	1.5	1.5
1986	86.9	86.9	7.3	9.6	0.9	0.8	2.8	2.3	1.2	1.3	0.8	0.9	1.9	2.0
1987	87.6	84.5	7.2	10.0	0.9	0.9	2.6	2.1	0.9	1.1	0.9	1.5	1.6	1.7
1988	84.7	81.8	8.0	10.7	0.8	0.8	3.2	2.5	1.5	2.0	1.2	1.5	2.2	2.2
1989	85.6	83.3	7.8	10.3	0.8	1.0	3.3	2.6	1.2	1.5	0.8	0.9	2.1	2.0
AVG	87.7	86.0	7.6	9.8	0.9	0.9	1.9	1.5	1.2	1.3	0.8	0.8	1.8	1.7

Note: Percentages sum to more than 100 because some students checked more than one category

CHART 1-3

SOURCE: *CHRONICLE OF HIGHER EDUCATION,* April 11, 1990, p. A37

MINORITIES AS A PERCENTAGE OF COLLEGE ENROLLMENT, BY STATE, 1988



The map shows the proportion of enrollments in each state comprising American Indian, Asian, black, and Hispanic students.

SOURCE: The American Freshman: National Norms for Fall 1973 through 1989, Cooperative Institutional Research Program, American Council on Education, University of California, Los Angeles

TABLE 1-29

PERCENTAGE DISTRIBUTION OF FRESHMEN BY PROBABLE MAJOR FIELD OF STUDY IN ALL INSTITUTIONS OF HIGHER EDUCATION, SELECTED YEARS, 1975 - 1989

Probable Major Field of Study	1973	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVG
Men																	
Arts & Humanities	10.1	12.7	12.4	7.5	7.4	7.5	6.4	7.4	6.8	6.8	6.6	7.1	7.4	8.7	8.0	7.6	8.2
Biological Sciences	8.2	7.1	6.7	4.8	4.8	4.3	3.7	3.9	3.7	4.1	4.1	3.4	4.0	3.8	4.1	3.8	4.7
Agriculture/Forestry	4.4	5.7	5.3	5.4	4.5	4.5	4.1	5.0	3.8	2.9	3.3	3.2	2.8	2.6	2.4	2.0	3.9
Business	21.1	20.0	22.5	23.8	25.0	25.1	22.9	22.7	22.3	22.7	25.1	25.7	26.6	28.6	27.6	25.9	24.2
Education	5.2	4.6	4.5	3.8	3.3	3.6	3.3	2.9	2.4	2.9	2.8	3.3	3.8	4.0	3.8	4.0	3.6
Engineering	12.1	14.0	15.2	17.0	18.8	19.2	21.0	21.3	22.3	20.6	20.1	19.3	19.7	17.0	17.5	18.8	18.4
Physical Sciences	4.2	4.0	3.9	3.5	3.5	3.2	3.6	2.9	2.6	2.5	2.5	2.3	2.2	2.3	2.3	2.4	3.0
Mathematics/Statistics	1.8	1.1	1.1	1.0	1.1	0.7	0.7	0.6	0.6	0.8	0.8	0.8	0.9	0.6	0.6	0.7	0.9
Computer Science				1.2	1.6	2.1	2.7	3.9	4.9	5.4	4.3	3.1	2.6	2.3	2.4	2.3	2.6
Health Prof (non-M.D.)	4.6	1.8	1.5	2.3	2.0	1.9	1.9	1.7	1.6	2.1	2.3	2.0	2.0	1.9	2.5	2.6	2.2
Premed, Predent, Prevet.				3.8	4.0	3.6	3.6	3.1	3.2	3.3	3.2	3.1	2.9	2.5	2.6	2.8	3.2
Social Sciences*	5.5	3.7	3.2	5.8	5.0	5.0	4.5	4.3	4.2	4.2	5.1	5.2	5.3	5.6	6.6	6.2	5.0
Other Fields (Technical)	8.4	10.3	8.6	8.7	7.0	8.6	8.5	9.9	9.7	9.9	7.7	7.5	6.4	6.5	3.7	5.7	7.9
Other Fields (Non-Tech)	7.1	10.2	11.2	7.4	8.1	6.8	9.3	6.4	8.2	8.1	8.0	9.0	10.0	8.1	9.5	6.1	8.3
Undecided	4.5	4.6	4.3	4.0	3.9	3.9	3.8	3.9	3.7	4.0	4.1	4.7	5.4	5.4	5.9	5.7	4.5
Women																	
Arts & Humanities	15.0	12.8	12.7	11.1	10.6	10.7	10.1	10.5	9.7	9.0	8.8	9.8	10.0	10.8	10.3	9.9	10.7
Biological Sciences	5.7	5.5	5.7	4.5	4.4	3.9	3.8	3.7	3.8	3.4	4.2	3.3	3.8	3.7	3.5	3.6	4.2
Agriculture/Forestry	1.0	1.9	2.0	2.0	2.0	1.7	1.8	2.2	1.4	0.9	1.0	1.0	1.7	0.8	1.0	0.5	1.4
Business	14.0	17.5	19.2	21.1	23.1	23.1	24.5	25.0	25.7	26.0	27.5	27.5	27.0	26.0	24.0	23.3	23.4
Education	19.6	15.5	14.3	13.6	12.1	12.5	11.6	10.8	9.0	8.9	9.6	10.4	12.1	13.3	13.9	13.3	12.5
Engineering	0.7	1.3	1.6	1.8	2.3	2.5	3.2	3.1	3.6	3.5	3.0	3.0	2.9	2.7	2.6	2.7	2.5
Physical Sciences	1.1	1.3	1.4	1.3	1.3	1.2	1.6	1.0	1.0	1.0	1.1	0.9	1.0	0.9	1.0	1.2	1.1
Mathematics/Statistics	1.6	1.1	0.8	0.7	0.8	0.6	0.6	0.6	0.7	0.8	0.9	0.8	0.7	0.6	0.6	0.6	0.8
Computer Science				0.9	1.2	1.4	2.4	3.2	4.0	3.7	2.7	1.8	1.3	0.9	1.0	1.0	1.9
Health Prof (non-M.D.)	16.5	13.2	12.4	15.5	14.6	13.4	13.3	13.1	13.2	14.9	13.8	11.6	9.9	9.3	9.8	9.4	12.7
Premed, Predent, Prevet.				2.8	2.9	2.9	3.2	2.9	3.0	3.2	3.1	3.2	2.9	2.5	3.0	3.1	3.0
Social Sciences*	11.7	8.9	8.2	9.9	9.5	9.6	8.6	7.9	7.2	7.6	8.4	9.6	10.2	10.5	12.1	12.5	9.5
Other Fields (Technical)	2.0	6.7	6.5	2.3	2.0	2.7	2.9	4.0	4.3	3.8	2.4	2.4	1.9	1.7	1.3	1.4	3.0
Other Fields (Non-Tech)	3.5	8.8	10.3	13.4	7.9	7.6	6.9	6.9	3.3	7.1	7.6	8.1	7.9	8.4	8.2	5.9	7.6
Undecided	4.9	5.5	5.1	5.3	5.3	5.6	5.5	5.4	5.5	5.7	6.2	6.9	7.5	7.6	7.6	7.9	6.1
All																	
Arts & Humanities	13.8	12.8	12.4	9.5	9.0	9.2	8.9	8.9	8.2	7.9	7.7	8.3	9.0	10.0	9.3	8.7	9.6
Biological Sciences	7.0	6.3	6.2	4.7	4.6	4.0	3.7	3.7	3.7	3.8	4.2	3.4	3.9	3.8	3.7	3.7	4.4
Agriculture/Forestry	2.8	3.9	3.6	3.6	3.1	3.0	2.9	3.5	2.6	1.9	2.0	2.0	1.8	1.7	1.7	1.2	2.6
Business	17.7	18.9	20.9	22.2	23.3	24.3	23.9	23.7	24.2	24.4	26.4	26.8	26.9	27.0	25.6	24.5	23.8
Education	12.2	9.9	9.3	8.8	8.0	8.4	7.7	7.1	6.0	6.0	6.5	7.1	8.1	8.9	9.3	9.2	8.3
Engineering	6.6	7.9	8.5	9.3	10.3	10.6	11.8	12.0	12.6	11.7	11.0	10.7	10.9	9.4	9.5	10.2	10.2
Physical Sciences	2.7	2.7	2.7	2.3	2.4	2.3	2.0	2.1	1.9	1.8	1.8	1.6	1.7	1.6	1.5	1.6	2.0
Mathematics/Statistics	1.7	1.1	1.0	0.8	0.9	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.8
Computer Science				1.0	1.4	1.8	2.5	3.5	4.4	4.5	3.4	2.3	1.9	1.6	1.7	1.6	2.4
Health Prof (non-M.D.)	10.4	7.3	6.9	9.1	8.6	7.9	7.9	7.6	7.6	8.7	8.2	7.1	6.2	5.9	6.5	4.6	7.5
Premed, Predent, Prevet.				3.3	3.4	3.2	3.4	3.0	3.1	3.2	3.2	3.1	2.9	2.5	2.8	3.0	3.1
Social Sciences*	8.1	6.2	5.6	7.6	7.4	7.8	6.7	6.2	5.8	6.1	6.7	7.6	8.0	8.1	9.5	9.6	7.3
Other Fields (Technical)	5.3	8.6	7.5	5.4	5.6	5.5	6.9	6.8	7.8	7.5	5.8	5.6	4.0	4.0	2.5	3.3	5.8
Other Fields (Non-Tech)	7.2	9.5	10.7	7.3	6.6	7.2	5.5	6.5	6.6	6.8	6.9	7.6	7.0	8.3	8.9	6.0	7.4
Undecided	4.7	5.0	4.7	4.7	4.6	4.8	4.7	4.7	4.6	4.9	5.2	5.9	6.5	6.6	6.8	6.9	5.3

* Political Science is included in Arts and Humanities through 1975 and then in Social Sciences.

SOURCE: Science & Engineering Indicators - 1989, National Science Board

TABLE 1-30

COLLEGE MAJOR CHOICES OF MERIT SCHOLARS BY SEX & FIELD, 1982 - 1988

								% Men/Women in Field of Total Men/Women in Field						
FIELD	1982	1983	1984	1985	1986	1987	1988	1982	1983	1984	1985	1986	1987	1988
ALL FIELDS	6965	7208	7564	7726	7569	7607	7665	100	100	100	100	100	100	100
Men	4249	4262	4606	4868	4915	4804	4817	100	100	100	100	100	100	100
Women	2716	2946	2958	2858	2654	2803	2848	100	100	100	100	100	100	100
ENGINEERING	1305	1429	1402	1400	1389	1281	1242	19	20	19	18	18	17	16
Men	969	1068	1039	1112	1142	1030	997	23	25	23	23	23	21	21
Women	336	361	363	288	247	251	245	12	12	12	10	9	9	9
NATURAL SCIENCES	1517	1642	1715	1705	1543	1480	1455	22	23	23	22	20	19	19
Men	973	986	1112	1127	1060	1002	979	23	23	24	23	22	21	20
Women	544	656	603	578	483	478	476	20	22	20	20	18	17	17
Physical Sciences	536	544	571	648	601	588	593	8	8	8	8	8	8	8
Men	396	374	433	477	458	440	454	9	9	9	10	9	9	9
Women	140	170	138	171	143	148	139	5	6	5	6	5	5	5
Biological Sciences	450	472	496	525	470	466	481	6	7	7	7	6	6	6
Men	215	184	214	241	229	234	241	5	4	5	5	5	5	5
Women	235	288	282	284	241	232	240	9	10	10	10	9	8	8
Computer Sciences	348	460	418	313	245	215	209	5	6	6	4	3	3	3
Men	244	325	326	264	219	186	180	6	8	7	5	4	4	4
Women	104	135	92	49	26	29	29	4	5	3	2	1	1	1
Math & Statistics	183	166	230	219	227	211	172	3	2	3	3	3	3	2
Men	118	103	139	145	154	142	104	3	2	3	3	3	3	2
Women	65	63	91	74	73	69	68	2	2	3	3	3	2	2
HEALTH SCIENCES	682	659	666	686	658	546	485	10	9	9	9	9	7	6
Men	357	344	359	386	384	312	249	8	8	8	8	8	6	5
Women	325	315	307	300	274	234	236	12	11	10	10	10	8	8
HUMANITIES & SOC SCI	1125	1164	1268	1401	1519	1492	1515	16	16	17	18	20	20	20
Men	581	574	626	706	809	775	758	14	13	14	15	16	16	16
Women	544	590	642	695	710	717	757	20	20	22	24	27	26	27
BUSINESSS	273	235	253	292	317	287	319	4	3	3	4	4	4	4
Men	135	100	114	157	170	171	183	3	2	2	3	3	4	4
Women	138	135	139	135	147	116	136	5	5	5	5	6	4	5
OTHER & UNDECIDED	546	437	545	537	600	1041	1194	8	6	7	7	8	14	16
Men	261	204	244	253	290	512	672	6	5	5	5	6	11	14
Women	285	233	301	284	310	529	522	10	8	10	10	12	19	18

SOURCE: The American Freshman: National Norms for Fall 1971 through 1989, Cooperative Institutional Research Program, American Council on Education, University of California, Los Angeles

TABLE 1-31

PROBABLE CAREER CHOICES OF COLLEGE FRESHMEN, BY SEX (WEIGHTED NATIONAL NORMS)
SELECTED YEARS, 1978 – 1989

	MEN								WOMEN							
FIELD	1978	1980	1982	1984	1986	1988	1989	Avg	1978	1980	1982	1984	1986	1988	1989	Avg
Accountant/Actuary	6.4	5.4	5.1	5.2	5.1	5.4	5.2	5.4	6.2	6.2	6.5	6.8	6.5	6.4	6.3	6.4
Actor/Entertainer	0.8	0.9	0.7	0.7	0.9	1.0	0.9	0.8	1.0	1.0	1.0	0.9	1.0	1.1	0.9	1.0
Architect/Urban Plan.	2.5	2.8	2.2	2.2	2.3	2.8	3.0	2.5	0.5	0.8	0.6	0.5	0.7	0.8	0.8	0.7
Artist	1.0	1.4	1.3	1.3	1.4	1.7	1.6	1.4	2.1	2.4	2.1	1.6	1.9	1.8	1.8	2.0
Business																
Clerical	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	4.6	3.9	3.5	3.5	2.4	1.6	1.7	3.0
Executive (Managemt)	11.3	11.1	10.8	12.5	13.9	14.0	12.8	12.3	7.3	9.2	10.1	11.4	12.1	11.0	9.9	10.1
Owner/Proprietor	4.1	4.1	3.9	4.5	5.3	5.7	5.0	4.7	1.0	1.3	1.5	1.7	2.3	2.4	2.0	1.7
Salesperson/Buyer	1.2	1.1	1.1	1.3	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.3	1.7	1.3	1.4	1.3
Clergy	0.8	0.7	0.5	0.4	0.4	0.4	0.4	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Clinical Psychologest	0.5	0.4	0.3	0.5	0.6	0.7	0.6	0.5	1.4	1.4	1.4	1.7	2.1	2.6	2.5	1.9
College Teacher	0.3	0.2	0.2	0.3	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.3
Comp. Program/Analyst	4.0	5.6	9.7	7.7	4.6	3.8	3.5	5.6	3.0	4.9	8.0	4.6	2.5	1.8	1.9	3.8
Cnservation/Forester	1.9	1.4	1.3	1.1	1.4	1.3	1.0	1.3	0.8	0.7	0.5	0.2	0.3	0.2	0.3	0.4
Dentist (incl Ortho)	1.4	1.2	0.9	0.7	0.7	0.6	0.6	0.9	0.6	0.7	0.5	0.5	0.4	0.5	0.5	0.5
Dietician/Home Econ	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	1.0	0.7	0.6	0.5	0.4	0.3	0.4	0.6
Engineer	16.5	19.1	20.6	18.5	17.4	15.7	16.5	17.8	2.2	2.9	3.6	2.9	2.8	2.5	2.6	2.8
Farmer/Rancher	1.8	2.0	2.0	1.6	1.0	0.8	0.8	1.4	0.5	0.4	0.4	0.3	0.1	0.2	0.1	0.3
Foreign Serv. Worker	0.3	0.4	0.4	0.5	0.6	0.7	0.6	0.5	0.7	0.6	0.7	0.8	1.2	1.4	1.2	0.9
Homemaker (full-time)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.2	0.1	0.2	0.1	0.2	0.2
Interior Decorator	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	1.0	1.0	1.0	0.8	1.0	0.9	0.9	0.9
Interpreter (Trans)	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3
Lab. Tech/Hygienist	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.4	3.0	2.3	2.0	1.5	1.1	0.6	0.6	1.6
Law Enforce. Officer	2.2	1.8	1.9	1.8	1.7	2.0	1.9	1.9	0.9	0.6	0.5	0.5	0.6	0.5	0.4	0.6
Lawyer/Judge	5.3	4.8	4.7	4.4	4.1	5.5	5.3	4.9	3.4	3.5	3.9	3.7	4.0	5.3	5.4	4.2
Military Caereer	1.8	1.7	1.6	2.1	2.3	2.1	1.7	1.9	0.4	0.2	0.2	0.3	0.3	0.2	0.2	0.3
Musician	1.6	1.5	1.4	1.2	1.5	1.4	1.4	1.4	1.2	0.9	0.9	0.7	0.8	0.8	0.7	0.9
Nurse	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	7.7	7.2	7.7	7.5	5.1	4.4	4.8	6.3
Optometrist	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.3	0.2	0.2
Pharmacist	0.7	0.5	0.3	0.5	0.6	0.8	0.8	0.6	0.6	0.5	0.5	0.8	0.8	1.3	1.2	0.8
Physician	4.3	4.1	4.1	4.5	3.9	4.0	4.0	4.1	2.8	2.9	3.1	3.5	3.4	3.5	3.6	3.3
School Counselor	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.2	0.3	0.4	0.4	0.5	0.3
School Princ/Supt.	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scientific Researcher	2.7	2.2	1.8	1.9	1.8	2.0	1.9	2.0	1.7	1.3	1.2	1.2	1.1	1.3	1.4	1.3
Social/Rec. Worker	0.6	0.6	0.3	0.4	0.4	0.3	0.3	0.4	3.9	3.2	2.0	2.1	2.3	2.2	2.1	2.5
Statistician	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Therapist	0.5	0.6	0.5	0.9	0.9	1.0	1.2	0.8	3.4	3.4	3.3	3.8	3.2	3.4	3.8	3.5
Teacher (Elementary)	0.4	0.5	0.4	0.4	0.6	0.7	0.7	0.5	6.8	6.9	5.5	6.1	7.9	9.7	8.7	7.4
Teacher (Secondary)	2.0	1.9	1.4	1.8	2.6	2.7	2.8	2.2	3.0	2.4	1.9	2.5	3.1	3.6	3.5	2.9
Veterinarian	1.1	0.9	0.8	0.7	0.7	0.6	0.5	0.8	1.6	1.5	1.5	1.5	1.1	1.1	1.0	1.3
Writer/Journalist	1.4	1.6	1.6	1.6	1.6	1.9	1.6	1.6	2.4	2.5	2.6	2.4	2.9	2.9	2.9	2.7
Skilled Trades	3.1	3.2	2.9	2.4	2.6	1.2	2.5	2.6	0.4	0.5	0.3	0.2	0.3	0.2	0.3	0.3
Other Career	5.7	5.8	5.6	5.3	5.8	6.2	7.6	6.0	8.3	8.1	7.5	7.7	7.7	7.4	9.5	8.0
Undecided	9.6	8.9	8.1	9.2	9.9	9.8	10.0	9.4	11.6	11.3	10.8	12.3	13.2	12.9	13.0	12.2

SOURCE: Cooperative Institutional Research Program, UCLA, *The American Freshman Norm Survey*, unpublished tabulations

TABLE 1-32

CAREER CHOICES OF AMERICAN FRESHMEN, BY OCCUPATION, SEX AND RACIAL/ETHNIC GROUP

Occupation	All Freshmen							Freshmen planning a science or engineering major (1)		
	Total	Male	Female	White	Black	Asian	Hispanic	Total	Male	Female
	Percent									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Business Manager	13.3	15.8	11.1	13.2	15.2	11.4	11.9	2.7	3.2	2.2
Business Owner	3.6	5.3	2.1	3.7	3.3	3.0	3.1	0.9	1.2	0.5
Clinical Psychologist	1.7	0.7	2.6	1.7	1.8	1.1	2.4	5.7	1.8	11.0
College Teacher	0.4	0.5	0.4	0.4	0.3	0.4	0.6	0.5	0.5	0.5
Computer Programmer	2.4	3.6	1.4	2.1	5.7	3.1	2.6	5.3	6.5	3.8
Engineer	8.4	14.8	2.8	8.0	9.9	17.1	10.1	28.6	40.8	11.9
Foreign Service Officer	1.4	1.0	1.8	1.4	0.5	1.6	1.8	3.1	1.9	4.7
Lawyer	5.6	5.7	5.5	5.3	7.9	4.5	7.1	8.2	6.7	10.2
Physician	4.8	5.1	4.5	4.0	6.3	17.0	8.8	7.0	6.3	7.9
Science Researcher	1.8	2.1	1.5	1.8	0.8	2.3	1.8	5.8	5.8	5.9
Social Worker	1.1	0.3	1.9	1.1	1.8	0.5	1.4	3.4	0.7	7.1
Statistician	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.2
Elementary or Secondary School Teacher	8.5	3.6	12.8	9.1	4.7	1.6	5.2	1.6	1.1	2.2
Undecided	12.7	10.7	14.4	13.4	6.5	11.7	10.8	9.1	6.9	12.1
Other	34.2	30.7	37.1	34.7	35.3	24.7	32.4	17.9	16.4	19.8

(1) Data by racial/ethnic group are not reliable for students whose probable major is a science or engineering field because of very small sample sizes.

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 1-33

FIRST TIME FRESHMAN AND TOTAL ENROLLMENT IN HIGHER EDUCATION BY SEX AND ATTENDANCE STATUS

FRESHMEN ENROLLMENT, 1955–87

[in thousands]

Year	Total, all freshmen	Men			Women		
		Total	Full-time	Part-time	Total	Full-time	Part-time
1	2	3	4	5	6	7	8
1955 [1]	670	416	—	—	254	—	—
1956 [1]	718	443	—	—	275	—	—
1957 [1]	724	442	—	—	282	—	—
1958 [1]	775	465	—	—	310	—	—
1959 [1]	822	488	—	—	334	—	—
1960 [1]	923	540	—	—	384	—	—
1961 [1]	1,018	592	—	—	426	—	—
1962 [1]	1,031	598	—	—	432	—	—
1963 [1]	1,046	604	—	—	442	—	—
1964 [1]	1,225	702	—	—	523	—	—
1965 [1]	1,442	829	—	—	613	—	—
1966	1,554	890	—	—	665	—	—
1967	1,641	931	761	170	710	574	136
1968	1,893	1,082	847	235	810	624	187
1969	1,967	1,118	876	242	849	649	200
1970	2,069	1,152	896	256	911	691	221
1971	2,119	1,171	896	275	949	710	238
1972	2,153	1,158	858	299	995	716	279
1973	2,226	1,182	867	315	1,044	740	304
1974	2,366	1,244	896	348	1,122	777	345
1975	2,515	1,328	942	386	1,187	821	366
1976	2,347	1,170	855	316	1,177	808	369
1977	2,394	1,156	840	316	1,239	841	398
1978	2,390	1,142	817	324	1,248	834	414
1979	2,503	1,180	840	340	1,323	866	457
1980	2,588	1,219	862	357	1,369	887	481
1981	2,595	1,218	852	366	1,378	886	492
1982	2,505	1,199	837	362	1,306	851	455
1983	2,444	1,159	825	334	1,285	853	431
1984	2,357	1,112	786	326	1,245	827	418
1985	2,292	1,076	775	301	1,216	827	389
1986 [3]	2,219	1,047	769	278	1,173	821	352
1987 [5]	2,246	1,047	779	267	1,200	848	352

[1] Excludes first-time freshmen in occupational programs not creditable towards a bachelor's degree.

TOTAL ENROLLMENT, 1957-1987

Year	Total enrollment	Attendance status		Sex of student	
		Full-time	Part-time	Men	Women
1	2	3	4	5	6
1957	3,323,783	—	—	2,170,765	1,153,018
1959	3,639,847	2,180,982	[1] 1,458,865	2,332,617	1,307,230
1961	4,145,065	2,561,447	[1] 1,583,618	2,585,821	1,559,244
1963	4,779,609	3,081,279	[1] 1,698,330	2,961,540	1,818,069
1964	5,280,020	3,467,708	[1] 1,812,312	3,248,713	2,031,307
1965	5,920,864	3,969,596	[1] 1,951,268	3,630,020	2,290,844
1966	6,389,872	4,438,606	[1] 1,951,266	3,856,216	2,533,656
1967	6,911,748	4,793,128	[1] 2,118,620	4,132,800	2,778,948
1968	7,513,091	5,210,155	2,302,936	4,477,649	3,035,442
1969	8,004,660	5,498,883	2,505,777	4,746,201	3,258,459
1970	8,580,887	5,816,290	2,764,597	5,043,642	3,537,245
1971	8,948,644	6,077,232	2,871,412	5,207,004	3,741,640
1972	9,214,860	6,072,389	3,142,471	5,238,757	3,976,103
1973	9,602,123	6,189,493	3,412,630	5,371,052	4,231,071
1974	10,223,729	6,370,273	3,853,456	5,622,429	4,601,300
1975	11,184,859	6,841,334	4,343,525	6,148,997	5,035,862
1976	11,012,137	6,717,058	4,295,079	5,810,828	5,201,309
1977	11,285,787	6,792,925	4,492,862	5,789,016	5,496,771
1978	11,260,092	6,667,657	4,592,435	5,640,998	5,619,094
1979	11,569,899	6,794,039	4,775,860	5,682,877	5,887,022
1980	12,096,895	7,097,958	4,998,937	5,874,374	6,222,521
1981	12,371,672	7,181,250	5,190,422	5,975,056	6,396,616
1982	12,425,780	7,220,618	5,205,162	6,031,384	6,394,396
1983	12,464,661	7,261,050	5,203,611	6,023,725	6,440,936
1984	12,241,940	7,098,388	5,143,552	5,863,574	6,378,366
1985	12,247,055	7,075,221	5,171,834	5,818,450	6,428,605
1986 [3]	12,504,501	7,120,076	5,384,425	5,884,976	6,619,525
1987 [5]	12,768,307	7,231,506	5,536,801	5,932,131	6,836,176

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 1-34

COLLEGE ENROLLMENT RATES OF HIGH SCHOOL GRADUATES, BY SEX AND RACE/ETHNICITY, 1960-1987

[numbers in thousands]

	High school graduates						Enrolled in college [1]											
	Total	White [2]	Black [2, 3]	Hispanic [3]	Males	Females	Total		White [2]		Black [2, 3]		Hispanic [3]		Males		Females	
							Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1960	1,679	1,565	—	—	756	923	758	45.1	717	45.8	—	—	—	—	408	54.0	350	37.9
1961	1,763	1,612	—	—	790	973	847	48.0	798	49.5	—	—	—	—	445	56.3	402	41.3
1962	1,838	1,660	—	—	872	966	900	49.0	840	50.6	—	—	—	—	480	55.0	420	43.5
1963	1,741	1,615	—	—	794	947	784	45.0	736	45.6	—	—	—	—	415	52.3	369	39.0
1964	2,145	1,964	—	—	997	1,148	1,037	48.3	967	49.2	—	—	—	—	570	57.2	467	40.7
1965	2,659	2,417	—	—	1,254	1,405	1,354	50.9	1,249	51.7	—	—	—	—	718	57.3	636	45.3
1966	2,612	2,403	—	—	1,207	1,405	1,309	50.1	1,243	51.7	—	—	—	—	709	58.7	600	42.7
1967	2,525	2,267	—	—	1,142	1,383	1,311	51.9	1,202	53.0	—	—	—	—	658	57.6	653	47.2
1968	2,606	2,303	—	—	1,184	1,422	1,444	55.4	1,304	56.6	—	—	—	—	748	63.2	696	48.9
1969	2,842	2,536	—	—	1,352	1,490	1,516	53.3	1,402	55.2	—	—	—	—	812	60.1	704	47.2
1970	2,757	2,461	—	—	1,343	1,414	1,427	51.8	1,280	52.0	—	—	—	—	741	55.2	686	48.5
1971	2,872	2,596	—	—	1,369	1,503	1,535	53.4	1,402	54.0	—	—	—	—	788	57.6	747	49.7
1972	2,961	2,614	—	—	1,420	1,541	1,457	49.2	1,292	49.4	—	—	—	—	749	52.7	708	45.9
1973	3,059	2,707	—	—	1,458	1,601	1,425	46.6	1,302	48.1	—	—	—	—	730	50.1	695	43.4
1974	3,101	2,736	—	—	1,491	1,610	1,474	47.5	1,288	47.1	—	—	—	—	736	49.4	738	45.8
1975	3,186	2,825	—	—	1,513	1,673	1,615	50.7	1,446	51.2	—	—	—	—	796	52.6	819	49.0
1976	2,987	2,640	320	152	1,450	1,537	1,458	48.8	1,291	48.9	134	41.9	80	52.6	685	47.2	773	50.3
1977	3,140	2,768	335	156	1,482	1,658	1,590	50.6	1,403	50.7	166	49.6	80	51.3	773	52.2	817	49.3
1978	3,161	2,750	352	133	1,485	1,676	1,584	50.1	1,378	50.1	161	45.7	57	42.9	758	51.0	826	49.3
1979	3,160	2,776	324	154	1,474	1,686	1,559	49.3	1,376	49.6	147	45.4	69	44.8	743	50.4	816	48.4
1980	3,089	2,682	361	129	1,500	1,589	1,524	49.3	1,339	49.9	151	41.8	68	52.7	701	46.7	823	51.8
1981	3,053	2,626	359	146	1,490	1,563	1,646	53.9	1,434	54.6	154	42.9	76	52.1	816	54.8	830	53.1
1982	3,100	2,644	384	174	1,508	1,592	1,568	50.6	1,376	52.0	140	36.5	75	43.1	739	49.0	829	52.1
1983	2,964	2,496	392	138	1,390	1,574	1,562	52.7	1,372	55.0	151	38.5	75	54.3	721	51.9	841	53.4
1984	3,012	2,514	438	185	1,429	1,583	1,662	55.2	1,455	57.9	176	40.2	82	44.3	800	56.0	862	54.5
1985	2,666	2,241	333	141	1,286	1,380	1,539	57.7	1,332	59.4	141	42.3	72	51.1	754	58.6	785	56.9
1986	2,786	2,307	386	169	1,331	1,455	1,499	53.8	1,292	56.0	141	36.5	75	44.4	744	55.9	755	51.9
1987	2,647	2,207	337	176	1,278	1,369	1,503	56.8	1,249	56.6	175	51.9	59	33.5	746	58.4	757	55.3

[1] Enrollment in college as of October of each year for individuals age 16 to 24 who graduated from high school during the preceding 12 months.

[2] Includes persons of Hispanic origin.

[3] Due to the small sample size, data are subject to relatively large amounts of sampling error.

—Data not available.

SOURCE: Minorities in Higher Education, Eigth Annual Status Report, 1989, American Council in Educaton.

TABLE 1-35

ENROLLED-IN-COLLEGE PARTICIPATION RATES FOR 18-TO-24-YEAR-OLD HIGH SCHOOL GRADUATES/M BY RACE/ETHNICITY AND SEX, 1976 - 1988

(numbers in thousands)

	ALL RACES		High School Graduates				Enrolled in College			
YEAR	Men	Women	Men	%M	Women	%W	Men	%M	Women	%W
1976	13,012	13,907	10,312	79.2	11,365	81.7	3,673	35.6	3,508	30.9
1977	13,218	14,113	10,440	79.0	11,569	82.0	3,712	35.6	3,431	29.7
1978	13,385	14,262	10,614	79.3	11,694	82.0	3,621	34.1	3,373	28.8
1979	13,571	14,403	10,657	78.5	11,763	81.7	3,508	32.9	3,482	29.6
1980	13,652	14,478	10,768	78.9	11,978	82.7	3,604	33.5	3,625	30.3
1981	14,127	14,838	11,052	78.2	12,290	82.8	3,833	34.7	3,741	30.4
1982	14,083	14,763	11,120	79.0	12,171	82.4	3,837	34.5	3,841	31.6
1983	14,003	14,577	10,906	77.9	12,082	82.9	3,820	35.0	3,657	30.3
1984	13,744	14,287	10,914	79.4	11,956	83.7	3,929	36.0	3,662	30.6
1985	13,199	13,923	10,614	80.4	11,736	84.3	3,749	35.3	3,788	32.3
1986	12,921	13,591	10,331	80.0	11,434	84.1	3,649	35.3	3,747	32.8
1987	12,626	13,324	10,030	79.4	11,086	83.2	3,867	38.6	3,826	34.5
1988	12,491	13,242	9,832	78.7	11,068	83.6	3,770	38.3	4,021	36.3
	WHITE									
1976	11,279	11,840	9,186	81.4	9,860	83.3	3,250	35.4	3,026	30.7
1977	11,445	11,985	9,263	80.9	10,029	83.7	3,286	35.5	2,923	29.1
1978	11,572	12,078	9,438	81.6	10,088	83.5	3,195	33.9	2,882	28.6
1979	11,721	12,174	9,457	80.7	10,157	83.4	3,104	32.8	3,015	29.7
1980	11,767	12,208	9,488	80.6	10,298	84.4	3,224	34.0	3,110	30.2
1981	12,040	12,446	9,619	79.9	10,504	84.4	3,340	34.7	3,208	30.5
1982	11,874	12,332	9,611	80.9	10,333	83.8	3,308	34.4	3,285	31.8
1983	11,787	12,112	9,411	79.8	10,233	84.5	3,335	35.4	3,129	30.6
1984	11,521	11,826	9,348	81.1	10,026	84.8	3,406	36.4	3,120	31.1
1985	11,108	11,524	9,077	81.7	9,840	85.4	3,254	35.8	3,247	33.0
1986	10,803	11,205	8,771	81.2	9,509	84.9	3,127	35.7	3,112	32.7
1987	10,549	10,944	8,498	80.6	9,189	84.0	3,289	38.7	3,192	34.7
1988	10,380	10,881	8,268	79.7	9,223	84.8	3,260	39.4	3,399	36.9

	BLACK		High School Graduates				Enrolled in College			
YEAR	Men	Wom	Men	%M	Wom	%W	Men	%M	Wom	%W
1976	1,503	1,813	936	62.3	1,302	71.8	331	35.4	417	32.0
1977	1,528	1,859	970	63.5	1,317	70.8	309	31.9	413	31.4
1978	1,554	1,897	956	61.5	1,384	73.0	305	31.9	390	28.2
1979	1,577	1,934	973	61.7	1,383	71.5	304	31.2	392	28.3
1980	1,600	1,955	1,055	65.9	1,425	72.9	278	26.4	410	28.8
1981	1,730	2,049	1,154	66.7	1,526	74.5	325	28.2	424	27.8
1982	1,786	2,086	1,171	65.6	1,572	75.4	331	28.3	436	27.7
1983	1,807	2,058	1,202	66.5	1,539	74.8	331	27.5	411	26.7
1984	1,811	2,052	1,272	70.2	1,613	78.6	367	28.9	410	25.4
1985	1,720	1,996	1,244	72.3	1,565	78.4	345	27.7	389	24.9
1986	1,699	1,966	1,225	72.1	1,576	80.2	340	27.8	461	29.3
1987	1,666	1,937	1,188	71.3	1,550	80.0	377	31.7	445	28.7
1988	1,653	1,915	1,189	71.9	1,492	77.9	297	25.0	455	30.5
	HISPANIC									
1976	701	850	378	53.9	483	56.8	150	39.7	160	33.1
1977	754	855	396	52.5	483	56.5	139	35.1	139	28.8
1978	781	891	420	53.8	516	57.9	126	30.0	128	24.8
1979	837	917	454	54.2	516	56.3	153	33.7	140	27.1
1980	971	992	497	51.2	556	56.0	154	31.0	160	28.8
1981	988	1,064	498	50.4	646	60.7	164	32.9	178	27.6
1982	944	1,056	519	55.0	634	60.0	141	27.2	196	30.9
1983	968	1,057	467	48.2	634	60.0	152	32.5	198	31.2
1984	956	1,061	549	57.4	661	62.3	154	28.1	207	31.3
1985	1,132	1,091	659	58.2	734	67.3	168	25.5	205	27.9
1986	1,338	1,175	772	57.7	737	62.7	224	29.0	220	29.9
1987	1,337	1,256	795	59.5	801	63.8	247	31.1	208	26.0
1988	1,375	1,267	724	52.7	736	58.1	228	31.5	223	30.3

SOURCE: "Educational Attainment in the United States", various years, Current Population Reports, Series P-20, U.S. Dept. of Commerce Bureau of Census and "The Condition of Education 1989", Vo. 2, National Center for Education Statistics, (CS 8 9-651)

TABLE 1-36

PERCENT OF POPULATION 25–34 WHO HAVE COMPLETED ONE OR MORE YEARS OF COLLEGE BY RACE/ETHNICITY, 1970–1989

Year	One or More Years				Two of More Years				Four or More Years			
	All	White	Black	Hispanic	All	White	Black	Hispanic	All	White	Black	Hispanic
1970	29.8	31.2	15.0		24.3	25.4	11.2		15.8	16.6	6.1	
1971	31.3	32.8	16.3		25.2	25.5	12.2		16.3	17.2	6.3	
1972	33.1	34.8	18.7		27.0	28.2	13.9		17.9	18.8	7.9	
1973	34.2	35.5	20.4		27.8	29.0	14.6		18.2	19.0	7.9	
1974	37.4	38.7	23.0	18.7	30.7	32.0	16.0	13.8	20.4	21.0	8.1	5.7
1975	39.4	40.4	25.9	19.6	32.2	33.2	19.4	13.5	21.4	22.2	10.7	7.0
1976	41.3	42.7	24.9	20.9	33.8	35.0	18.9	14.7	22.6	23.5	11.3	7.4
1977	43.6	45.1	28.6	21.9	35.9	37.3	21.1	15.3	23.8	25.0	11.4	6.9
1978	44.8	46.1	32.6	22.7	36.8	38.1	24.1	16.9	23.6	24.8	11.4	8.8
1979	45.5	47.0	31.3	23.1	37.6	38.7	23.7	17.1	23.8	24.9	12.8	7.8
1980	45.8	47.2	33.6	23.6	36.8	38.9	24.9	17.8	24.1	25.4	12.4	8.9
1981	44.9	45.9	34.1	24.4	37.4	37.8	26.5	17.8	23.2	24.3	11.7	8.8
1982	45.2	46.2	35.8	23.8	38.4	38.4	27.3	18.7	23.8	24.9	12.6	9.7
1983	46.2	47.3	33.0	24.7	38.4	39.5	25.3	19.4	24.4	25.5	13.6	10.2
1984	45.7	47.1	32.8	26.0	37.7	39.1	24.7	19.7	24.3	25.5	13.1	10.1
1985	45.8	46.8	35.3	25.6	37.8	38.7	28.0	19.5	23.8	24.8	13.7	10.5
1986	45.7	46.6	36.2	24.9	37.0	38.9	28.5	19.5	24.0	25.1	13.6	9.9
1987	45.4	46.3	35.0	27.1	37.8	38.7	26.6	21.2	23.9	25.1	12.3	9.8
1988	44.8	45.6	34.1	29.0	37.4	38.1	26.9	22.5	23.7	24.5	13.1	11.9

SOURCE: National Center for Education Statistics

TABLE 1-37

1989 HIGH SCHOOL GRADUATES ENROLLED IN COLLEGE IN OCTOBER 1989 (in thousands)

	Graduates	Enrolled	% Enrolled
Total	2,454	1,463	59.6%
Men	1,208	696	57.6
Women	1,245	767	61.6
White	2,051	1,238	60.4
Black	337	178	52.8
Hispanic	168	93	55.4

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 1-38

ENROLLMENT RATES OF 18- TO 24-YEAR-OLDS IN HIGHER EDUCATION, BY RACE/ETHNICITY, 1967-1986

Year	All students		White		Black		Hispanic origin [1]	
	Enrollment as a percent of 18- to 24-year olds	Enrollment as a percent of high school graduates	Enrollment as a percent of 18- to 24-year-olds	Enrollment as a percent of high school graduates	Enrollment as a percent of 18- to 24-year-olds	Enrollment as a percent of high school graduates	Enrollment as a percent of 18- to 24-year-olds	Enrollment as a percent of high school graduates
1	2	3	4	5	6	7	8	9
1967	25.5	33.7	26.9	34.5	13.0	23.3	—	—
1968	26.0	34.2	27.5	34.9	14.5	25.2	—	—
1969	27.3	35.0	28.7	35.6	16.0	27.2	—	—
1970	25.7	32.7	27.1	33.2	15.5	26.0	—	—
1971	26.2	33.2	27.2	33.5	18.2	29.2	—	—
1972	25.5	31.9	26.4	32.3	18.1	27.1	13.4	25.8
1973	24.0	29.7	25.0	30.2	16.0	24.0	16.0	29.1
1974	24.6	30.5	25.2	30.5	17.9	26.6	18.1	32.3
1975	26.3	32.5	26.9	32.4	20.7	32.0	20.4	35.5
1976	26.7	33.1	27.1	33.0	22.6	33.5	19.9	35.8
1977	26.1	32.5	26.5	32.2	21.3	31.5	17.2	31.5
1978	25.3	31.4	25.7	31.1	20.1	29.7	15.2	27.2
1979	25.0	31.2	25.6	31.2	19.8	29.5	16.6	30.2
1980	25.6	31.6	26.2	31.8	19.2	27.6	16.1	29.8
1981	26.2	32.5	26.7	32.5	19.9	28.0	16.7	29.9
1982	26.6	33.0	27.2	33.1	19.8	28.0	16.8	29.2
1983	26.2	32.5	27.0	32.9	19.2	27.0	17.2	31.4
1984	27.1	33.2	28.0	33.7	20.4	27.2	17.9	29.9
1985	27.8	33.7	28.7	34.4	19.8	26.1	16.9	26.9
1986	27.9	34.0	28.3	34.1	21.9	28.6	17.6	29.4

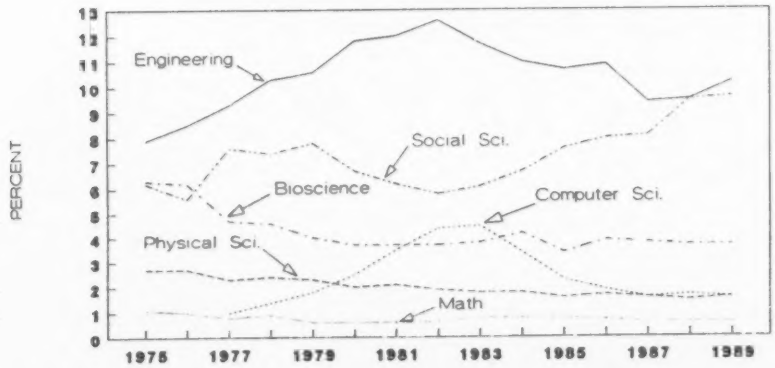
[1] Persons of Hispanic origin may be of any race.
—Data not available.

NOTE.—Data are based upon sample surveys of the civilian noninstitutional population.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-20, No. 429. (This table was prepared October 1988.)

CHART 1-4

FRESHMAN PLANS FOR S/E MAJORS 1975 -1989



Source : CIRP

Graph by CPST (11 1-25 FROSHPLA)

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 1-39

ENROLLMENT OF PERSONS AGE 14-34 IN HIGHER EDUCATION, BY RACE/ETHNICITY, SEX AND YEAR OF COLLEGE, FALL 1975-1987

[in thousands]

Characteristic	1965	1970	1975	1976	1977	1978	1979	1980	1981 [2]	1982	1983	1984	1985	1986	1987
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
								Numbers in thousands							
All students	5,675	7,413	9,697	9,950	10,217	9,838	9,978	10,180	10,734	10,919	10,825	10,859	10,863	10,605	10,918
White															
Total	5,317	6,759	8,514	8,644	8,812	8,514	8,709	8,875	9,162	9,328	9,242	9,269	9,334	8,943	9,146
Men	3,326	4,066	4,771	4,658	4,717	4,508	4,400	4,438	4,620	4,650	4,718	4,709	4,633	4,485	4,563
Women	1,991	2,693	3,743	3,986	4,095	4,006	4,309	4,437	4,543	4,679	4,524	4,559	4,701	4,459	4,583
Black															
Total	274	522	948	1,062	1,103	1,022	1,002	1,007	1,133	1,127	1,102	1,138	1,049	1,138	1,196
Men	126	253	442	489	490	452	434	437	505	482	497	544	458	488	525
Women	148	269	506	573	614	569	568	570	628	645	605	594	591	649	671
Hispanic origin [3]															
Total	—	—	411	427	418	377	440	443	510	493	523	524	579	677	667
Men	—	—	219	223	223	196	226	222	258	216	253	232	280	331	369
Women	—	—	192	204	194	181	214	221	252	278	270	292	299	346	298
Year of college															
First	1,861	2,212	2,886	2,632	2,936	2,766	2,885	2,957	3,096	2,990	2,987	3,024	2,956	2,965	2,915
Second	1,256	1,739	2,376	2,535	2,364	2,286	2,291	2,411	2,560	2,617	2,624	2,454	2,585	2,564	2,745
Third	896	1,248	1,492	1,748	1,681	1,658	1,653	1,716	1,799	1,815	1,805	1,981	1,931	1,803	2,011
Fourth	803	1,074	1,354	1,356	1,427	1,445	1,458	1,403	1,598	1,688	1,595	1,599	1,642	1,640	1,556
Fifth or higher	859	1,140	1,589	1,680	1,810	1,681	1,691	1,692	1,682	1,810	1,814	1,802	1,749	1,633	1,690
								Percentage distribution							
All students	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White															
Total	93.7	91.2	87.8	86.9	86.2	86.5	87.3	87.2	85.4	85.4	85.4	85.4	85.9	84.3	83.8
Men	58.6	54.8	49.2	46.8	46.2	45.8	44.1	43.6	43.0	42.6	43.6	43.4	42.6	42.3	41.8
Women	35.1	36.3	38.6	40.1	40.1	40.7	43.2	43.6	42.3	42.9	41.8	42.0	43.3	42.0	42.0
Black															
Total	4.8	7.0	9.8	10.7	10.8	10.4	10.0	9.9	10.6	10.3	10.2	10.5	9.7	10.7	11.0
Men	2.2	3.4	4.6	4.9	4.8	4.6	4.3	4.3	4.7	4.4	4.6	5.0	4.2	4.6	4.8
Women	2.6	3.6	5.2	5.8	6.0	5.8	5.7	5.6	5.9	5.9	5.6	5.5	5.4	6.1	6.1
Hispanic origin [3]															
Total	—	—	4.2	4.3	4.1	3.8	4.4	4.4	4.8	4.5	4.8	4.8	5.3	6.4	6.1
Men	—	—	2.3	2.2	2.2	2.0	2.3	2.2	2.4	2.0	2.3	2.1	2.6	3.1	3.4
Women	—	—	2.0	2.1	1.9	1.8	2.1	2.2	2.3	2.5	2.5	2.7	2.8	3.3	2.7
Year of college															
First	32.8	29.8	29.8	26.5	28.7	28.1	28.9	29.0	28.8	27.4	27.6	27.8	27.2	28.0	26.7
Second	22.1	23.5	24.5	25.5	23.1	23.2	23.0	23.7	23.8	24.0	24.2	22.6	23.8	24.2	25.1
Third	15.8	16.8	15.4	17.6	16.5	16.9	16.6	16.9	16.8	16.6	16.7	18.2	17.8	17.0	18.4
Fourth	14.1	14.5	14.0	13.6	14.0	14.7	14.6	13.8	14.9	15.5	14.7	14.7	15.1	15.5	14.3
Fifth or higher	15.1	15.4	16.4	16.9	17.7	17.1	16.9	16.6	15.7	16.6	16.8	16.6	16.1	15.4	15.5

[1] Totals differ from those shown in other tables. This table presents data collected in sample surveys of households rather than surveys of institutions. Excludes persons age 35 and over.

[2] Data for 1981 and later years are controlled to 1980 census base.

[3] Persons of Hispanic origin may be of any race.

—Data not available.

NOTE.—Data are based upon sample surveys of the civilian noninstitutional population. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-20, No. 409; and unpublished data. (This table was prepared March 1989.)

Source: National Center for Education Statistics as published in the Chronicle of Higher Education, April 11, 1990, p. 37

TABLE 1-40

ENROLLMENT IN HIGHER EDUCATION INSTITUTIONS BY SEX AND RACE/ETHNIC GROUP, FALL 1976 - 1988

(Numbers in thousands)

YEAR	All Students			White			Black			Hispanic			Asian			American Indian			Foreign		
	Total	Men	Women	Total	Men	Women	Total	Men	Wom	Total	Men	Wom	Total	Men	Wom	Total	Men	Wom	Total	Men	Wom
1976	10,986	5,794	5,191	9,076	4,814	4,262	1,033	470	563	384	210	174	198	108	89	76	39	38	219	154	65
1978	11,231	5,621	5,609	9,194	4,613	4,581	1,054	453	601	417	213	205	235	126	109	78	37	41	253	180	73
1980	12,087	5,868	6,219	9,833	4,773	5,060	1,107	464	643	472	232	240	286	151	135	84	38	46	305	211	94
1982	12,388	5,999	6,389	9,997	4,830	5,167	1,101	458	644	519	252	267	351	189	162	88	40	48	331	230	101
1984	12,235	5,859	6,376	9,815	4,690	5,125	1,076	437	639	535	254	281	390	210	180	84	38	46	335	231	104
1986	12,504	5,885	6,619	9,921	4,647	5,273	1,082	436	646	618	290	328	448	239	209	90	39	51	345	233	112
1988	13,043	5,998	7,045	10,283	4,712	5,572	1,130	443	687	680	310	370	497	259	237	93	39	53	361	235	126
	Percentages of Total Students																				
1976	100	52.7	47.3	82.6	43.8	38.8	9.4	4.3	5.1	3.5	1.9	1.6	1.8	1.0	0.8	0.7	0.4	0.3	2.0	1.4	0.6
1978	100	50.0	49.9	81.9	41.1	40.8	9.4	4.0	5.4	3.7	1.9	1.8	2.1	1.1	1.0	0.7	0.3	0.4	2.3	1.6	0.6
1980	100	48.5	51.5	81.4	39.5	41.9	9.2	3.8	5.3	3.9	1.9	2.0	2.4	1.2	1.1	0.7	0.3	0.4	2.5	1.7	0.8
1982	100	48.4	51.6	80.7	39.0	41.7	8.9	3.7	5.2	4.2	2.0	2.2	2.8	1.5	1.3	0.7	0.3	0.4	2.7	1.9	0.8
1984	100	47.9	52.1	80.2	38.3	41.9	8.8	3.6	5.2	4.4	2.1	2.3	3.2	1.7	1.5	0.7	0.3	0.4	2.7	1.9	0.9
1986	100	47.1	52.9	79.3	37.2	42.2	8.7	3.5	5.2	4.9	2.3	2.6	3.6	1.9	1.7	0.7	0.3	0.4	2.8	1.9	0.9
1988	100	46.0	54.0	78.8	36.1	42.7	8.7	3.4	5.3	5.2	2.4	2.8	3.8	2.0	1.8	0.7	0.3	0.4	2.8	1.8	1.0
	Percentages of Sub-group																				
1976	100	52.7	47.3	100	53.0	47.0	100	45.5	54.5	100	54.7	45.3	100	54.5	44.9	100	51.3	50.0	100	70.3	29.7
1978	100	50.0	49.9	100	50.2	49.8	100	43.0	57.0	100	51.1	49.2	100	53.6	46.4	100	47.4	52.6	100	71.1	28.9
1980	100	48.5	51.5	100	48.5	51.5	100	41.9	58.1	100	49.2	50.8	100	52.8	47.2	100	45.2	54.8	100	69.2	30.8
1982	100	48.4	51.6	100	48.3	51.7	100	41.6	58.5	100	48.6	51.4	100	53.8	46.2	100	45.5	54.5	100	69.5	30.5
1984	100	47.9	52.1	100	47.8	52.2	100	40.6	59.4	100	47.5	52.5	100	53.8	46.2	100	45.2	54.8	100	69.0	31.0
1986	100	47.1	52.9	100	46.8	53.1	100	40.3	59.7	100	46.9	53.1	100	53.3	46.7	100	43.3	56.7	100	67.5	32.5
1988	100	46.0	54.0	100	45.8	54.2	100	39.2	60.8	100	45.6	54.4	100	52.1	47.7	100	41.9	57.0	100	65.1	34.9

Note Totals may not check due to rounding

SOURCE: National Center for Education Statistics as published in the Chronicle of Higher Education, April 11, 1990, p. 37

TABLE 1-41

ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION BY TYPE OF INSTITUTION, SEX AND RACE/ETHNICITY, FALL 1978 – FALL 1988 (Numbers in thousands)

	Total	White	%W	Minority Total	%M	Black	%B	Hispanic	%H	Asian	%A	American Indian	%I	Foreig	%F
All Institutions								**Total**							
1978	11,231	9,194	81.9	1,776	15.8	1,054	9.4	417	3.7	235	2.0	78	0.6	253	1.3
1980	12,087	9,833	81.4	1,937	16.0	1,107	9.2	472	3.9	286	2.4	84	0.6	305	1.4
1982	12,388	9,997	80.7	2,050	16.5	1,101	8.9	519	4.2	351	2.8	88	0.6	331	1.7
1984	12,235	9,815	80.2	2,083	17.0	1,076	8.8	535	4.4	390	3.2	84	0.7	335	1.8
1986	12,504	9,921	79.3	2,226	17.8	1,082	8.7	618	4.9	448	3.6	90	0.6	345	1.7
1988	13,043	10,283	78.8	2,400	18.4	1,130	8.7	680	5.2	497	3.8	93	0.7	361	2.8
Total	73,488	59,043	80.3	12,472	17.0	6,550	8.9	3,241	4.4	2,207	3.0	517	0.7	1,930	2.6
								Men							
1978	5,621	4,613	82.1	796	14.2	453	8.1	213	3.8	126	2.2	37	0.1	180	1.3
1980	5,868	4,773	81.3	851	14.5	464	7.9	232	4.0	151	2.6	38	0.1	211	1.4
1982	5,999	4,830	80.5	903	15.1	458	7.6	252	4.2	189	3.2	40	0.1	230	1.6
1984	5,859	4,690	80.0	906	15.5	437	7.5	254	4.3	210	3.6	38	0.1	231	1.8
1986	5,885	4,647	79.0	970	16.5	436	7.4	290	4.9	239	4.1	39	0.1	233	2.0
1988	5,998	4,712	78.6	1,051	17.5	443	7.4	310	5.2	259	4.3	39	0.7	235	3.9
Total	35,230	28,265	80.2	5,477	15.5	2,691	7.6	1,551	4.4	1,174	3.3	231	0.7	1,320	3.7
								Women							
1978	5,609	4,581	81.7	916	16.3	601	10.7	205	3.7	109	2.0	41	0.0	73	0.1
1980	6,219	5,060	81.4	1,019	16.4	643	10.3	240	3.9	135	2.2	46	0.0	94	0.0
1982	6,389	5,167	80.9	1,074	16.8	644	10.1	267	4.2	162	2.5	48	0.0	101	0.0
1984	6,376	5,125	80.4	1,101	17.3	639	10.0	281	4.4	180	2.8	46	0.0	104	0.0
1986	6,619	5,273	79.7	1,184	17.9	646	9.8	328	5.0	209	3.2	51	0.0	112	0.0
1988	7,045	5,572	79.1	1,347	19.1	687	9.8	370	5.3	237	3.4	53	0.8	126	1.8
Total	38,257	30,778	80.5	6,641	17.4	3,860	10.1	1,691	4.4	1,032	2.7	285	0.7	610	1.6
4-Year Institutions								**Total**							
1978	7,203	6,027	83.7	940	13.1	612	8.5	190	2.6	138	1.9	35	0.0	201	0.0
1980	7,565	6,275	82.9	1,013	13.4	634	8.4	217	2.9	162	2.1	37	0.0	241	0.0
1982	7,648	6,306	82.5	1,034	13.5	612	8.0	229	3.0	193	2.5	39	0.0	270	0.0
1984	7,708	6,301	81.7	1,086	14.1	617	8.0	246	3.2	223	2.9	38	0.0	282	0.0
1986	7,824	6,337	81.0	1,155	14.8	615	7.9	278	3.6	262	3.3	40	0.0	292	0.0
1988	8,175	6,582	80.5	1,291	15.8	656	8.0	296	3.6	297	3.6	42	0.5	302	3.7
Total	46,123	37,828	82.0	6,519	14.1	3,746	8.1	1,456	3.2	1,275	2.8	231	0.5	1,588	3.4
2-Year Institutions								**Total**							
1978	4,028	3,167	78.6	767	19.0	443	11.0	227	5.6	97	2.4	43	0.0	52	0.0
1980	4,521	3,558	78.7	851	18.8	472	10.4	255	5.6	124	2.7	47	0.0	64	0.0
1982	4,740	3,692	77.9	938	19.8	489	10.3	291	6.1	158	3.3	49	0.0	61	0.0
1984	4,527	3,514	77.6	915	20.2	459	10.1	289	6.4	167	3.7	46	0.0	53	0.0
1986	4,680	3,584	76.6	993	21.2	467	10.0	340	7.3	186	4.0	51	0.0	53	0.0
1988	4,868	3,702	76.0	1,106	22.7	473	9.7	384	7.9	199	4.1	50	1.0	60	1.2
Total	27,364	21,217	77.5	5,570	20.4	2,803	10.2	1,786	6.5	931	3.4	286	1.0	343	1.3

SOURCE: National Center for Education Statistics, Department fo Education

TABLE 1-42

TOTAL ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION BY LEVEL OF STUDY AND RACE/ETHNICITY OF STUDENT, FALL 1976 - FALL 1988

(Numbers in thousands)

	Total	White	% W	Minority Total	% M	Black	% B	His-panic	% H	Asian or Pac Is	% A	American Indian	% I	Nonresident Alien	% A
Undergraduates															
1976	9,520	7,827	82.2	1,550	16.3	950	10.0	357	3.8	173	1.8	70	0.7	142	1.5
1978	9,757	7,946	81.4	1,641	16.8	975	10.0	388	4.0	206	2.1	72	0.7	169	1.7
1980	10,580	8,556	81.0	1,798	17.0	1,028	9.7	438	4.1	253	2.4	79	0.7	208	2.0
1982	10,875	8,749	80.5	1,908	17.5	1,028	9.5	485	4.5	313	2.9	82	0.8	220	2.0
1984	10,610	8,484	80.0	1,911	18.0	995	9.4	495	4.7	343	3.2	78	0.7	216	2.0
1986	10,798	8,558	79.3	2,035	18.8	996	9.2	563	5.2	393	3.6	83	0.8	205	1.9
1988	11,304	8,907	78.8	2,193	19.4	1,039	9.2	631	5.6	437	3.9	86	0.8	205	1.8
Total	73,424	59,027	80.4	13,036	17.8	7,011	9.5	3,357	4.6	2,118	2.9	550	0.7	1,365	1.9
Graduates															
1976	1,221	1,030	84.4	119	9.7	72	5.9	22	1.8	21	1.7	4	0.3	73	6.0
1978	1,219	1,019	83.6	120	9.8	68	5.6	24	2.0	24	2.0	4	0.3	80	6.6
1980	1,250	1,030	82.4	125	10.0	66	5.3	27	2.2	28	2.2	4	0.3	94	7.5
1982	1,235	1,002	81.1	123	10.0	61	4.9	27	2.2	30	2.4	5	0.4	108	8.7
1984	1,344	1,087	80.9	141	10.5	67	5.0	32	2.4	37	2.8	5	0.4	115	8.6
1986	1,435	1,133	79.0	166	11.6	72	5.0	46	3.2	43	3.0	5	0.3	136	9.5
1988	1,472	1,153	78.3	167	11.3	76	5.2	39	2.6	46	3.1	6	0.4	151	10.3
Total	9,176	7,454	81.2	961	10.5	482	5.3	217	2.4	229	2.5	33	0.4	757	8.2
First-prof.															
1976	244	220	90.2	21	8.6	11	4.5	5	2.0	4	1.6	1	0.4	3	1.2
1978	255	229	89.8	22	8.6	11	4.3	5	2.0	5	2.0	1	0.4	3	1.2
1980	277	248	89.5	27	9.7	13	4.7	7	2.5	6	2.2	1	0.4	3	1.1
1982	278	246	88.5	29	10.4	13	4.7	7	2.5	8	2.9	1	0.4	3	1.1
1984	278	243	87.4	31	11.2	13	4.7	8	2.9	9	3.2	1	0.4	3	1.1
1986	270	231	85.6	35	13.0	14	5.2	9	3.3	11	4.1	1	0.4	4	1.5
1988	267	223	83.5	38	14.2	14	5.2	9	3.4	14	5.2	1	0.4	5	1.9
Total	1,869	1,640	87.7	203	10.9	89	4.8	50	2.7	57	3.0	7	0.4	24	1.3

Note: Because of underreporting and nonreporting of racial/ethnic data, data were estimated when posible.
Due to rounding, detail may not add to totals.

TABLE 1-43

ENROLLMENT BY TYPE OF INSTITUTION, CITIZENSHIP & RACE/ETHNIC GROUP 1988

	Total	White	Black	Hispanic	Asian	American Indian	Foreign
Public							
4-Year	42.5%	43.3%	39.7%	31.7%	42.3%	36.0%	50.2%
2-Year	35.4	34.1	38.3	54.6	39.4	51.6	15.6
Private							
4-Year	20.2%	20.7%	18.4%	11.8%	16.5%	9.5%	33.3%
2-Year	2.0	1.9	3.6	1.9	0.8	2.9	0.9
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 1-44

DISABLED STUDENTS ENROLLED IN POST-SECONDARY INSTITUTIONS BY TYPE OF DISABILITY, FALL 1986

Type of disability	Disabled students		Percent of disabled students by condition
	Enrollment	Percent of all students	
1	2	3	4
Disabled students	**1,319,229**	**10.5**	—
Specific learning disability	160,878	1.3	12.2
Visual handicap	514,681	4.1	39.0
Hard of hearing	265,484	2.1	20.1
Deafness	80,910	0.6	6.1
Speech disability	62,525	0.5	4.7
Orthopedic handicap	231,491	1.8	17.6
Health impairment	320,272	2.6	24.3

TABLE 1-45

DISABLED STUDENTS ENROLLED IN HIGHER EDUCATION SELECTED CHARACTERISTICS, FALL 1986

Selected student characteristics	Disabled students [1]	Nondisabled students	Selected student characteristics	Disabled students [1]	Nondisabled students
1	2	3	1	2	3
Sex	100.0	100.0	Level of study	100.0	100.0
Male	50.8	44.7	Undergraduate	91.6	88.8
Female	49.2	55.3	Graduate	6.8	8.7
			First-professional	1.6	2.5
Race/ethnicity	100.0	100.0			
White, non-Hispanic	78.5	78.2	Undergraduate	100.0	100.0
Black, non-Hispanic	8.0	9.0	Arts and humanities	7.4	6.4
Hispanic	7.5	6.5	Business	24.4	28.1
Asian American	4.1	5.5	Education	9.3	8.6
American Indian	1.9	.8	Engineering	9.8	9.5
			Health	7.8	9.7
Age	100.0	100.0	Liberal/general studies	7.3	6.9
15 to 23	49.8	55.8	Natural sciences [2]	10.7	10.7
24 to 29	17.5	19.8	Social sciences	8.8	7.3
30 or older	32.7	24.4	Trade/industrial	3.2	2.5
			All other	11.4	10.4
Veteran status	100.0	100.0			
Veteran	11.4	6.0	Graduate	100.0	100.0
Not a veteran	88.6	94.0	Arts and humanities	10.7	9.6
			Business	13.6	21.4
Dependency status	100.0	100.0	Education	25.4	22.4
Dependent	55.9	59.5	Engineering	4.6	6.4
Independent	44.1	40.5	Natural sciences [2]	10.2	12.0
			Social sciences	9.9	9.5
Housing status	100.0	100.0	All other	25.6	18.7
School-owned	19.1	18.9			
Off-campus, not with parents	55.2	53.5	First-professional	100.0	100.0
With parents	25.7	27.6	Law	49.9	38.9
			Medicine	25.4	38.6
Attendance status	100.0	100.0	Other medical [3]	19.9	17.5
Full-time	62.8	61.0	Theology	4.8	4.9
Part-time	37.2	39.0			

[1] Disabled students are those who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

[2] Includes students who majored in life sciences, physical sciences, mathematics, or computer sciences.

[3] Includes chiropractic medicine, dentistry, optometry, osteopathic medicine, pharmacy, podiatry, and veterinary medicine.

NOTE.—Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "The 1987 National Postsecondary Student Aid Study." (This table was prepared March 1989.)

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 1-46

TOTAL ENROLLMENT IN SELECTED MAJOR FIELDS IN FOUR-YEAR INSTITUTIONS, BY SEX, FALL 1976 - 1986

Selected major fields of study	1976			1978 [1]			1980			1984 [2]			1986 [3]		
	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total enrollment	**7,126,515**	**3,828,893**	**3,297,622**	**7,230,380**	**3,754,579**	**3,475,801**	**7,570,608**	**3,827,341**	**3,743,267**	**7,622,847**	**3,797,607**	**3,825,060**	**7,824,502**	**3,823,854**	**4,000,648**
Percent	**100.0**	**53.7**	**46.3**	**100.0**	**51.9**	**48.1**	**100.0**	**50.6**	**49.4**	**100.0**	**49.8**	**50.2**	**100.0**	**48.9**	**51.1**
Agriculture and natural resources															
Enrollment	124,903	92,370	32,533	125,312	88,235	37,077	113,376	78,158	35,218	—	—	—	—	—	—
Percent	100.0	74.0	26.0	100.0	70.4	29.6	100.0	68.9	31.1	—	—	—	—	—	—
Architecture and environmental design															
Enrollment	58,149	44,207	13,942	57,673	42,106	15,567	59,660	42,302	17,358	56,896	37,632	19,264	56,756	36,878	19,878
Percent	100.0	76.0	24.0	100.0	73.0	27.0	100.0	70.9	29.1	100.0	66.1	33.9	100.0	65.0	35.0
Business and management															
Enrollment	951,945	679,795	272,150	1,112,511	728,011	384,500	1,240,258	742,859	497,399	1,292,868	715,415	577,453	1,270,187	690,588	579,599
Percent	100.0	71.4	28.6	100.0	65.4	34.6	100.0	59.9	40.1	100.0	55.3	44.7	100.0	54.4	45.6
Dentistry															
Enrollment	20,272	18,049	2,223	21,793	18,735	3,058	22,668	18,812	3,856	19,997	15,217	4,780	17,773	12,916	4,857
Percent	100.0	89.0	11.0	100.0	86.0	14.0	100.0	83.0	17.0	100.0	76.1	23.9	100.0	72.7	27.3
Engineering															
Enrollment	374,815	346,023	28,792	440,038	392,871	47,167	503,960	441,965	61,995	514,257	439,444	74,813	485,857	414,973	70,884
Percent	100.0	92.3	7.7	100.0	89.3	10.7	100.0	87.7	12.3	100.0	85.5	14.5	100.0	85.4	14.6
Law															
Enrollment	119,581	88,679	30,902	118,298	82,302	35,996	118,993	78,569	40,424	117,673	71,443	46,230	105,965	62,789	43,176
Percent	100.0	74.2	25.8	100.0	69.6	30.4	100.0	66.0	34.0	100.0	60.7	39.3	100.0	59.3	40.7
Life sciences															
Enrollment	289,906	175,379	114,527	272,560	154,971	117,589	241,807	132,067	109,740	233,333	118,651	114,682	218,001	108,044	109,957
Percent	100.0	60.5	39.5	100.0	56.9	43.1	100.0	54.6	45.4	100.0	50.9	49.1	100.0	49.6	50.4
Mathematics															
Enrollment	—	—	—	—	—	—	—	—	—	96,772	56,041	40,731	89,434	51,086	38,348
Percent	—	—	—	—	—	—	—	—	—	100.0	57.9	42.1	100.0	57.1	42.9
Medicine															
Enrollment	58,085	45,145	12,940	66,713	51,241	15,472	74,132	55,060	19,072	67,877	46,492	21,385	65,462	43,680	21,782
Percent	100.0	77.7	22.3	100.0	76.8	23.2	100.0	74.3	25.7	100.0	68.5	31.5	100.0	66.7	33.3
Physical sciences															
Enrollment	146,025	115,137	30,888	148,432	114,166	34,266	154,092	114,919	39,173	143,514	105,412	38,102	128,979	92,483	36,496
Percent	100.0	78.8	21.2	100.0	76.9	23.1	100.0	74.6	25.4	100.0	73.5	26.5	100.0	71.7	28.3
Veterinary medicine															
Enrollment	6,126	4,425	1,701	7,186	4,762	2,424	8,164	4,980	3,184	9,190	4,762	4,428	8,707	4,092	4,615
Percent	100.0	72.2	27.8	100.0	66.3	33.7	100.0	61.0	39.0	100.0	51.8	48.2	100.0	47.0	53.0
All other															
Enrollment	4,976,708	2,219,564	2,757,024	4,859,864	2,077,179	2,782,685	5,033,498	2,117,650	2,915,848	5,070,290	2,187,096	2,883,192	[4] 5,377,381	[4] 2,306,325	[4] 3,071,056
Percent	100.0	44.6	55.4	100.0	42.7	57.3	100.0	42.1	57.9	100.0	43.1	56.9	100.0	42.9	57.1

[1] Excludes approximately 0.1 percent of students whose major field of study was not reported.
[2] Excludes approximately 1.2 percent of students whose major field of study was not reported.
[3] Revised from previously published data.
[4] Includes students whose major field of study was not reported.
—Data not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Institutions of Higher Education"; and Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment, 1986" survey. (This table was prepared April 1989.)

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TOTAL ENROLLMENT IN SELECTED MAJOR FIELDS IN FOUR-YEAR INSTITUTIONS, BY LEVEL, SEX, AND ATTENDANCE STATUS FALL 1986

TABLE 1-47

Level, sex, and attendance status of student	All fields	Architecture and environmental design	Business and management	Dentistry	Engineering	Law	Life sciences	Mathematics	Medicine	Physical sciences	Veterinary medicine	All other fields [1]
1	2	3	4	5	6	7	8	9	10	11	12	13
All students	**7,824,502**	**56,756**	**1,270,187**	**17,773**	**485,857**	**105,965**	**218,001**	**89,434**	**65,462**	**128,979**	**8,707**	**5,377,381**
Men	3,823,854	36,878	690,588	12,916	414,973	62,789	108,044	51,086	43,680	92,483	4,092	2,306,325
Full-time	2,774,642	31,847	485,659	12,839	327,000	54,248	90,822	40,493	43,261	73,875	4,065	1,610,533
Part-time	1,049,212	5,031	204,929	77	87,973	8,541	17,222	10,593	419	18,608	27	695,792
Women	4,000,648	19,878	579,599	4,857	70,884	43,176	109,957	38,348	21,782	36,496	4,615	3,071,056
Full-time	2,648,938	16,174	399,992	4,837	57,652	37,114	90,790	31,025	21,556	29,232	4,576	1,965,990
Part-time	1,351,710	3,704	189,607	20	13,232	6,062	19,167	7,323	226	7,264	39	1,105,066
Undergraduate students	6,118,801	46,380	1,055,804	—	391,144	—	177,679	73,079	—	87,281	—	4,287,434
Men	2,956,754	30,250	554,002	—	332,037	—	85,230	40,212	—	60,404	—	1,854,619
Full-time	2,321,874	26,537	438,669	—	283,184	—	75,199	33,662	—	51,064	—	1,413,559
Part-time	634,880	3,713	115,333	—	48,853	—	10,031	6,550	—	9,340	—	441,060
Women	3,162,047	16,130	501,802	—	59,107	—	92,449	32,867	—	26,877	—	2,432,815
Full-time	2,334,138	13,283	366,762	—	51,779	—	79,696	28,273	—	22,665	—	1,771,480
Part-time	827,909	2,847	135,040	—	7,328	—	12,753	4,594	—	4,012	—	661,335
Graduate students	1,435,288	10,314	214,328	—	94,713	—	39,754	16,348	—	41,698	—	1,018,133
Men	693,238	6,590	136,555	—	82,936	—	22,388	10,869	—	32,079	—	401,821
Full-time	294,202	5,272	46,990	—	43,816	—	15,199	6,826	—	22,811	—	153,288
Part-time	399,036	1,318	89,565	—	39,120	—	7,189	4,043	—	9,268	—	248,533
Women	742,050	3,724	77,773	—	11,777	—	17,366	5,479	—	9,619	—	616,312
Full-time	227,711	2,867	23,229	—	5,873	—	10,953	2,750	—	6,367	—	175,672
Part-time	514,339	857	54,544	—	5,904	—	6,413	2,729	—	3,252	—	440,640
First-professional students	270,413	62	55	17,773	—	105,965	568	7	65,462	—	8,707	71,814
Men	173,862	38	31	12,916	—	62,789	426	5	43,680	—	4,092	49,885
Full-time	158,566	38	—	12,839	—	54,248	424	5	43,261	—	4,065	43,686
Part-time	15,296	—	31	77	—	8,541	2	—	419	—	27	6,199
Women	96,551	24	24	4,857	—	43,176	142	2	21,782	—	4,615	21,929
Full-time	87,089	24	1	4,837	—	37,114	141	2	21,556	—	4,576	18,838
Part-time	9,462	—	23	20	—	6,062	1	—	226	—	39	3,091

[1] Includes students whose major field of study was not reported.
— Data not reported or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment, 1986" survey. (This table was prepared April 1989.)

SOURCE: *Open Doors 1989-90,* Institute for International Education, reprinted from *CHRONICLE OF HIGHER EDUCATION,* 11/28/90

TABLE 1-48

FOREIGN STUDENTS IN THE U.S., 1989-90

DISTRIBUTION BY FIELD OF STUDY

Field of study	1988-89 Number of foreign students	1988-89 Proportion of foreign students	1989-90 Number of foreign students	1989-90 Proportion of foreign students
Agriculture	8,370	2.3%	8,310	2.1%
Allied health	3,500	1.0	3,860	1.0
Architecture & environmental design	5,720	1.6	5,670	1.5
Area & ethnic studies	1,170	0.3	1,520	0.4
Business & management	69,320	18.9	75,570	19.5
Communications	5,520	1.5	6,040	1.6
Communications technologies	350	0.1	570	0.1
Computer & information sciences	26,970	7.3	27,660	7.2
Education	11,210	3.1	11,210	2.9
Engineering	72,710	19.8	73,420	19.0
English language	16,020	4.4	19,120	5.0
Foreign languages	3,870	1.1	4,080	1.0
Health sciences	11,730	3.2	11,490	3.0
Home economics	1,920	0.5	1,980	0.5
Industrial arts	650	0.2	590	0.1
Law	2,130	0.6	2,200	0.6
Letters	5,410	1.5	6,270	1.6
Liberal & general studies	13,050	3.6	15,240	3.9
Library & archival sciences	720	0.2	850	0.2
Life sciences	11,590	3.2	12,610	3.2
Mathematics	8,290	2.3	8,550	2.2
Military sciences	170	—	140	—
Military technologies	20	—	70	—
Multi / interdisciplinary studies	1,960	0.5	1,970	0.5
Parks & recreation	260	0.1	230	0.1
Personal & social development	2,120	0.6	2,540	0.7
Philosophy & religion	1,680	0.5	1,930	0.5
Physical sciences	18,240	4.9	18,850	4.9
Protective services	570	0.2	550	0.1
Psychology	3,660	1.0	3,900	1.0
Public affairs	3,000	0.7	3,260	0.8
Science technologies	1,490	0.4	1,450	0.4
Social sciences	19,640	5.4	19,120	5.0
Theology	3,090	0.7	2,950	0.8
Visual & performing arts	10,370	2.8	11,190	2.9
Vocational home economics	220	0.1	280	0.1
Undeclared	19,640	5.4	21,610	5.6
Total	366,350	100.0%	386,850	100.0%

COUNTRY OF ORIGIN

Rank	Country or territory	Students	Rank	Country or territory	Students
1.	China	33,390	35.	Kuwait	2,280
2.	Taiwan	30,960	36.	Panama	2,260
3.	Japan	29,840	37.	Sri Lanka	2,210
4.	India	26,240	38.	Kenya	2,200
5.	Republic of Korea	21,710	39.	Norway	2,160
6.	Canada	17,870	39.	Trinidad & Tobago	2,160
7.	Malaysia	14,110	41.	South Africa	2,050
8.	Hong Kong	11,230	42.	Ethiopia	2,020
9.	Indonesia	9,390	43.	Vietnam	1,850
10.	Iran	7,440	44.	Netherlands	1,840
11.	United Kingdom	7,100	45.	Argentina	1,810
12.	Pakistan	7,070	46.	Cyprus	1,750
13.	West Germany	6,750	47.	Australia	1,740
14.	Thailand	6,630	47.	Sweden	1,740
15.	Mexico	6,540	49.	Egypt	1,700
16.	France	5,340	50.	Bahamas	1,640
17.	Jordan	5,250	51.	Syria	1,500
18.	Philippines	4,540	52.	Haiti	1,490
19.	Nigeria	4,480	53.	Honduras	1,470
20.	Lebanon	4,450	54.	United Arab Emirates	1,450
21.	Singapore	4,440	55.	Ireland	1,380
22.	Greece	4,430	56.	El Salvador	1,370
23.	Saudi Arabia	4,110	57.	Cameroon	1,240
24.	Brazil	3,730	57.	Switzerland	1,240
25.	Spain	3,640	59.	Ecuador	1,170
26.	Turkey	3,400	60.	Morocco	1,140
27.	Colombia	3,320	61.	Chile	1,100
28.	Israel	2,910	62.	Yugoslavia	1,070
29.	Jamaica	2,850	63.	Bolivia	1,060
30.	Peru	2,750	64.	Costa Rica	1,060
31.	Venezuela	2,740	65.	Ghana	1,030
32.	Bangladesh	2,470	65.	Guatemala	1,030
33.	Nicaragua	2,450	67.	Poland	1,010
34.	Italy	2,370			

Note: Includes only countries with over 1,000 students in U.S. institutions.

From	1989-90	1-year change
Asia	208,110	+8.7%
Latin America	48,090	+6.8%
Europe	46,040	+7.6%
Middle East	37,330	−7.1%
Africa	24,570	−7.0%
North America	18,590	+11.1%
Oceania	4,010	+11.1%

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 1-49

GRADUATE ENROLLMENT BY SEX, ATTENDANCE AND CONTROL FALL 1969-1987

[in thousands]

Year	Total	Full-time	Part-time	Men		Women		Men		Women	
				Full-time	Part-time	Full-time	Part-time	Public	Private	Public	Private
1	2	3	4	5	6	7	8	9	10	11	12
1969	955	363	593	252	338	111	255	393	197	273	93
1970	1,031	379	651	264	366	115	285	423	207	301	99
1971	1,012	388	621	269	346	119	275	415	200	296	100
1972	1,066	394	671	268	358	126	313	427	199	330	109
1973	1,123	410	715	273	375	137	340	442	206	358	119
1974	1,190	427	762	276	387	151	375	454	209	398	128
1975	1,263	453	810	290	410	163	400	481	219	425	138
1976	1,333	463	870	287	427	176	443	477	237	454	165
1977	1,319	473	845	289	411	184	434	458	243	443	174
1978	1,312	468	844	280	402	188	442	441	241	453	177
1979	1,309	476	833	280	389	196	444	427	242	457	182
1980	1,343	485	860	281	394	204	466	426	247	474	195
1981	1,343	484	859	277	397	207	462	419	255	468	201
1982	1,322	485	838	280	390	205	447	417	253	453	200
1983	1,340	497	843	286	391	211	452	418	259	454	209
1984	1,345	501	844	286	386	215	459	411	261	459	215
1985	1,376	509	867	289	388	220	479	414	263	477	223
1986	1,435	522	913	294	399	228	514	433	260	508	234
1987 [2]	1,452	527	925	294	400	233	525	429	264	516	243

TABLE 1-50

FIRST PROFESSIONAL ENROLLMENT BY SEX, ATTENDANCE AND CONTROL, FALL 1969-1987

[in thousands]

Year	Total	Full-time	Part-time	Men		Women		Men		Women	
				Full-time	Part-time	Full-time	Part-time	Public	Private	Public	Private
1	2	3	4	5	6	7	8	9	10	11	12
1969	164,737	143,081	21,656	131,368	17,558	11,713	4,098	64,241	84,685	8,354	7,457
1970	173,411	157,384	16,027	144,270	14,379	13,114	1,648	68,956	89,693	6,501	8,261
1971	192,668	176,224	16,444	159,386	14,672	16,838	1,772	98,233	75,825	9,430	9,180
1972	206,659	190,039	16,620	168,990	14,453	21,049	2,167	79,723	103,720	10,842	12,374
1973	218,990	201,663	17,327	171,731	14,566	29,932	2,761	81,811	104,486	16,138	16,555
1974	235,452	216,329	19,123	178,926	15,153	37,403	3,970	84,271	109,008	20,085	21,288
1975	242,267	219,886	22,381	177,117	14,983	42,769	7,398	79,240	112,860	23,557	26,610
1976	244,292	220,124	24,168	171,967	17,843	48,157	6,325	77,873	111,937	23,468	31,014
1977	251,357	226,318	25,039	173,165	18,286	53,153	6,753	78,189	113,262	24,901	35,005
1978	256,904	232,540	24,364	174,906	17,315	57,634	7,049	77,748	114,473	26,839	37,844
1979	263,404	238,949	24,455	176,394	16,969	62,555	7,486	77,122	116,241	29,026	41,015
1980	277,767	251,359	26,408	181,448	17,896	69,911	8,512	81,022	118,322	33,415	45,008
1981	274,595	248,328	26,267	175,414	17,522	72,914	8,745	77,562	115,374	34,177	47,482
1982	278,425	252,108	26,317	173,941	17,259	78,167	9,058	76,273	114,927	37,183	50,042
1983	278,529	249,636	28,893	169,071	19,025	80,565	9,868	74,938	113,158	38,484	51,949
1984	278,598	249,708	28,890	166,286	18,663	83,422	10,227	73,722	111,227	40,186	53,463
1985	274,200	246,619	27,581	162,368	17,424	84,251	10,157	71,373	108,419	40,435	53,973
1986 [1]	270,413	245,655	24,758	158,566	15,296	87,089	9,462	70,331	103,531	41,695	54,856
1987 [2]	268,467	241,804	26,663	153,661	16,472	88,143	10,191	68,155	101,978	42,136	56,198

SOURCE: National Science Foundation, *Women and Minorities in Science and Engineering , January,*

TABLE 1-51

GRADUATE RECORD EXAMINATION SCORES BY UNDERGRADUATE MAJOR, SEX, AND RACE/ETHNICITY, 1979 AND 1987

Undergraduate major and year	Total	Men	Women	White	Black	Asian	Native American	Mexican American	Puerto Rican	Latin American
Verbal										
All majors										
1979	488	487	489	511	363	480	459	419	389	465
1987	487	487	487	516	386	476	471	440	389	469
Students who majored in science or engineering										
Physical sciences										
1979	519	514	534	541	391	495	482	509	418	509
1987	505	504	509	546	422	516	521	490	391	496
Mathematical sciences										
1979	505	510	498	537	364	476	494	420	375	468
1987	483	488	474	537	371	441	500	472	414	468
Biological sciences										
1979	492	485	500	521	358	494	447	407	398	473
1987	504	502	506	527	404	511	479	471	380	494
Behavioral sciences										
1979	507	506	509	528	386	503	483	446	399	481
1987	507	513	504	528	401	504	487	458	401	482
Social sciences										
1979	454	452	457	484	343	453	451	409	363	465
1987	458	461	456	488	358	460	447	421	361	446
Engineering										
1979	468	465	497	527	403	459	478	434	390	476
1987	466	461	492	532	436	451	487	460	401	477
Quantitative										
All majors										
1979	514	555	478	525	358	566	457	422	418	468
1987	539	585	499	541	390	604	473	456	443	495
Students who majored in science or engineering										
Physical sciences										
1979	630	640	600	639	462	658	581	600	532	592
1987	639	648	615	645	499	672	602	584	517	615
Mathematical sciences										
1979	665	682	636	682	486	660	671	595	550	626
1987	657	670	635	673	472	658	652	613	573	603
Biological sciences										
1979	555	577	528	569	381	596	479	448	450	509
1987	570	585	558	581	428	612	521	517	456	542
Behavioral sciences										
1979	500	522	479	514	366	528	457	427	387	460
1987	513	539	494	522	382	547	459	446	403	479
Social sciences										
1979	474	501	446	496	337	494	443	413	378	429
1987	479	511	454	495	346	517	439	405	378	436
Engineering										
1979	654	661	603	675	521	675	570	595	583	624
1987	673	675	663	688	579	682	636	626	601	634

 SOURCE: National Science Foundation, SRS

TABLE 1-52

FULL TIME SCIENCE/ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY FIELD AND SEX FALL 1985 - 1988

Field	MEN				WOMEN			
	1985 1/	1986 1/	1987 1/	1988	1985 1/	1986 1/	1987 1/	1988
Total, all surveyed fields	174,049	179,979	182,952	184,346	157,585	162,715	166,132	173,092
Total, science/engineering fields	167,935	173,008	175,249	176,644	121,611	125,521	128,597	133,410
Engineering, total	49,874	53,581	54,962	55,981	11,338	12,674	13,099	13,373
Aerospace	1,888	2,106	2,255	2,[illegible]	168	202	226	232
Agricultural	809	820	839	[illegible]	78	84	86	86
Biomedical	884	996	1,046	1,[illegible]	291	346	397	439
Chemical	4,792	4,806	4,300	[illegible]	1,004	1,039	1,154	1,075
Civil	8,[illegible]	8,[illegible]	8,[illegible]	8,[illegible]	2,282	2,307	2,184	2,373
Electrical	13,353	14,351	15,[illegible]	16,[illegible]	2,409	2,904	3,076	3,[illegible]
Engineering science	1,146	1,193	1,257	[illegible]	240	297	291	[illegible]
Industrial	2,379	3,138	3,500	[illegible]	1,945	2,263	2,355	2,248
Mechanical	8,516	9,153	9,450	[illegible]	1,011	1,162	1,289	1,[illegible]
Metallurgical/materials	2,552	2,836	2,345	2,[illegible]	600	663	705	732
Mining	[illegible]	[illegible]	[illegible]	[illegible]	30	36	40	48
Nuclear	899	940	940	1,[illegible]	107	123	128	127
Petroleum	530	534	601	[illegible]	66	48	[illegible]	49
Engineering, n.e.c.	2,756	3,037	3,070	3,[illegible]	1,107	1,200	1,104	965
Sciences, total	117,161	119,427	120,387	120,763	110,273	112,947	115,498	120,038
Physical sciences	21,241	22,023	22,384	22,[illegible]	6,512	6,865	7,118	7,512
Astronomy	531	533	566	[illegible]	108	121	120	140
Chemistry	11,592	11,796	11,949	11,[illegible]	4,791	5,026	5,176	5,466
Physics	9,002	9,594	9,361	10,[illegible]	1,498	1,577	1,673	1,751
Physical sciences, n.e.c.	116	95	108	87	115	141	149	155
Environmental sciences	8,574	8,390	7,926	7,549	3,974	3,980	3,914	3,981
Atmospheric sciences	[illegible]	694	676	622	157	179	168	163
Geosciences	5,342	5,610	5,074	4,[illegible]	2,484	2,356	2,[illegible]	2,112
Oceanography	1,[illegible]	1,169	1,159	1,[illegible]	610	667	634	645
Environmental sciences, n.e.c.	885	917	917	954	723	778	848	961
Mathematical sciences	8,615	8,998	9,500	9,782	5,386	5,489	5,645	5,789
Computer sciences	11,351	11,975	12,245	12,328	7,457	7,748	7,904	8,332
Agricultural sciences	6,734	6,853	6,631	6,608	2,958	2,945	2,943	3,063
Biological sciences	22,029	22,226	22,440	22,767	20,056	20,635	20,673	21,561
Anatomy	509	514	538	[illegible]	424	413	444	465
Biochemistry	2,836	2,867	2,924	2,861	1,748	1,895	1,909	2,008
Biology	5,977	5,954	5,767	5,187	5,495	5,541	5,294	5,553
Biometry/epidemiology	488	486	576	[illegible]	720	774	781	883
Biophysics	287	337	335	408	110	137	141	149
Botany	1,[illegible]	1,[illegible]	1,673	1,660	1,240	1,171	1,196	1,168
Cell biology	895	1,009	1,165	1,[illegible]	518	672	771	850
Ecology	561	544	562	[illegible]	367	382	375	406
Entomology/parasitology	953	808	776	766	350	358	338	359
Genetics	567	618	620	610	523	597	641	629
Microbiology	2,224	2,196	2,263	2,416	1,957	1,945	2,017	2,178
Nutrition	1,119	1,107	1,089	994	2,965	3,014	2,947	3,006
Pathology	634	644	631	689	568	573	606	574
Pharmacology	1,277	1,242	1,182	1,[illegible]	836	844	879	882
Physiology	1,245	1,247	1,253	1,[illegible]	836	854	835	863
Zoology	1,112	1,088	1,116	1,[illegible]	763	776	797	788
Biosciences, n.e.c.	589	621	702	836	636	689	712	800
Psychology	10,357	10,332	10,472	10,446	25,607	26,162	27,174	28,730
Social sciences	28,560	28,630	28,889	29,021	38,323	39,023	40,227	41,170
Agricultural economics	1,[illegible]	1,[illegible]	1,[illegible]	1,[illegible]	507	501	507	546
Anthropology	1,786	1,792	1,828	1,861	3,114	3,338	3,346	3,452
Economics (except agricultural)	6,924	6,945	6,941	6,933	3,193	3,151	3,180	3,252
Geography	1,433	1,452	1,546	1,487	948	984	1,093	1,056
History and philosophy of science	155	150	184	169	92	97	96	104
Linguistics	981	1,016	1,046	1,069	1,857	1,857	1,988	1,968
Political science	8,579	8,655	8,580	8,[illegible]	10,529	10,762	11,039	11,279
Sociology	2,[illegible]	2,141	2,[illegible]	2,[illegible]	3,482	3,539	3,[illegible]	3,308
Sociology/anthropology	271	274	278	269	538	539	510	548
Social sciences, n.e.c.	4,609	4,668	4,707	4,325	14,063	14,255	14,658	15,147
Health fields, total	7,014	6,971	7,703	7,702	35,974	37,194	37,535	39,682
Dentistry	524	643	671	685	187	207	281	294
Neurology	266	332	296	358	129	146	186	246
Nursing	310	323	522	364	17,167	17,609	17,381	18,143
Pharmaceutical sciences	1,146	1,136	1,089	[illegible]	868	940	985	1,052
Preventive medicine/community health	1,646	1,[illegible]	1,379	1,[illegible]	3,992	3,854	3,841	4,152
Speech pathology/audiology	808	650	549	610	7,010	7,099	6,930	6,932
Veterinary sciences	330	327	374	379	236	236	278	300
Clinical medicine, n.e.c.	536	593	694	770	939	903	1,017	1,086
Health related, n.e.c.	1,388	1,329	1,629	1,567	5,446	6,200	6,736	7,477

1/ Includes estimated data for master's-granting institutions

SOURCE: National Science Foundation, SRS

TABLE 1-52 (continued)

FULL TIME SCIENCE/ENGINEERING GRADUATE STUDENTS IN PHD-GRANTING INSTITUTIONS BY FIELD, LEVEL, CITIZENSHIP, SEX AND CONTROL, FALL 1988

Field	Total	Level of study		Citizenship		Sex		Type of control	
		First year	Beyond first year	U.S.	Foreign	Men	Women	Public	Private
Total, all surveyed fields	268,385	78,133	190,252	187,683	80,702	174,539	93,846	191,560	76,825
Total, science/engineering fields	245,463	69,075	176,388	167,741	77,722	167,388	78,075	174,150	71,313
Engineering, total	61,656	18,767	42,889	33,225	28,431	54,161	7,495	44,545	17,111
Aerospace	2,517	909	1,608	1,491	1,026	2,351	166	1,926	591
Agricultural	879	242	637	406	473	807	72	834	45
Biomedical	1,402	398	1,004	971	431	1,039	363	881	521
Chemical	5,330	1,262	4,078	2,975	2,355	4,544	786	3,713	1,617
Civil	9,874	3,200	6,674	5,153	4,721	8,304	1,570	7,764	2,110
Electrical	17,162	5,454	11,708	9,269	7,893	15,509	1,653	11,903	5,259
Engineering science	1,421	338	1,083	801	620	1,293	128	626	795
Industrial	4,258	1,534	2,724	2,238	2,020	3,526	732	3,151	1,107
Mechanical	10,181	3,120	7,061	5,541	4,640	9,369	812	7,537	2,644
Metallurgical/materials	3,398	787	2,611	1,778	1,620	2,838	560	2,147	1,251
Mining	379	97	282	173	206	344	35	315	64
Nuclear	1,105	291	814	644	461	1,004	101	900	205
Petroleum	570	148	422	226	344	543	27	443	127
Engineering, n.e.c.	3,180	997	2,183	1,779	1,401	2,690	490	2,405	775
Sciences, total	183,807	50,308	133,499	134,516	49,291	113,227	70,580	129,605	54,202
Physical sciences	27,832	6,245	21,587	17,621	10,211	21,700	6,132	19,978	7,854
Astronomy	705	159	546	545	160	569	136	470	235
Chemistry	15,636	3,499	12,137	10,459	5,177	11,170	4,466	11,407	4,229
Physics	11,373	2,548	8,825	6,535	4,838	9,887	1,486	8,005	3,368
Physical sciences, n.e.c.	118	39	79	82	36	74	44	96	22
Environmental sciences	9,893	2,454	7,439	7,791	2,102	7,240	2,653	8,069	1,824
Atmospheric sciences	825	209	616	595	230	678	147	811	14
Geosciences	6,088	1,419	4,669	4,914	1,174	4,623	1,465	4,766	1,322
Oceanography	1,576	370	1,206	1,179	397	1,073	503	1,355	221
Environmental sciences, n.e.c.	1,404	456	948	1,103	301	866	538	1,137	267
Mathematical sciences	12,791	3,657	9,134	7,254	5,537	9,330	3,461	9,839	2,952
Computer sciences	13,911	4,589	9,222	7,729	6,082	10,876	2,935	9,244	4,567
Agricultural sciences	8,677	2,070	6,607	6,131	2,546	6,333	2,344	8,390	287
Biological sciences	38,235	9,289	28,946	29,337	8,898	21,946	16,289	27,838	10,397
Anatomy	985	255	730	805	180	554	431	658	327
Biochemistry	4,759	1,026	3,733	3,445	1,314	2,857	1,902	3,268	1,491
Biology	7,655	1,970	5,685	6,249	1,406	4,463	3,187	5,212	2,443
Biometry/epidemiology	1,176	436	740	876	300	550	626	631	545
Biophysics	544	130	414	385	159	406	138	297	247
Botany	2,649	607	2,042	1,770	879	1,639	1,010	2,412	237
Cell biology	2,028	472	1,556	1,626	402	1,201	827	1,115	913
Ecology	822	182	640	700	122	514	308	766	56
Entomology/parasitology	1,091	234	857	775	256	752	309	1,000	61
Genetics	1,146	236	910	886	260	609	537	856	290
Microbiology	4,332	938	3,394	3,345	987	2,412	1,920	3,245	1,087
Nutrition	2,765	801	1,964	1,832	933	972	1,793	2,242	523
Pathology	1,117	243	874	869	248	684	433	803	314
Pharmacology	2,070	476	1,594	1,611	459	1,232	838	1,460	610
Physiology	2,009	595	1,412	1,561	447	1,246	762	1,321	687
Zoology	1,708	399	1,309	1,447	261	1,038	670	1,616	92
Biosciences, n.e.c.	1,410	318	1,092	1,155	255	812	598	936	474
Psychology	23,360	5,997	17,363	22,149	1,211	8,803	14,557	13,619	9,741
Social sciences	49,288	16,007	33,201	36,504	12,704	26,999	22,209	32,628	16,580
Agricultural economics	1,978	583	1,395	1,030	848	1,419	459	1,770	108
Anthropology	4,234	962	3,272	3,579	655	1,839	2,395	2,919	1,315
Economics (except agricultural)	8,919	2,540	6,379	4,543	4,376	6,733	2,186	5,578	3,341
Geography	1,984	620	1,364	1,593	391	1,334	650	1,816	168
History and philosophy of science	266	60	206	221	45	169	97	130	136
Linguistics	2,456	676	1,780	1,503	953	1,040	1,416	1,572	884
Political science	12,082	4,180	7,902	9,309	2,773	7,747	4,335	6,575	5,507
Sociology	4,829	1,190	3,639	3,447	1,381	2,257	2,571	3,437	1,391
Sociology/anthropology	538	191	347	417	121	253	285	415	123
Social sciences, n.e.c.	12,023	4,996	7,027	10,862	1,161	4,208	7,815	8,416	3,607
Health fields, total	22,922	9,058	13,864	19,942	2,980	7,151	15,771	17,410	5,512
Dentistry	930	388	542	774	156	685	245	721	209
Neurology	588	131	457	488	100	352	236	375	213
Nursing	5,409	2,129	3,280	5,242	167	290	5,119	4,356	1,053
Pharmaceutical sciences	1,828	424	1,404	1,044	784	1,109	719	1,510	318
Preventive medicine/community health	3,930	1,839	2,091	3,113	817	1,732	2,198	2,711	1,219
Speech pathology/audiology	4,322	1,861	2,461	4,085	237	530	3,792	3,758	564
Veterinary sciences	589	150	439	432	157	366	223	517	72
Clinical medicine, n.e.c.	1,375	443	932	1,152	223	755	620	803	572
Health related, n.e.c.	3,951	1,693	2,258	3,612	339	1,332	2,619	2,659	1,292

TABLE 1-53

TOTAL SCIENCE/ENGINEERING GRADUATE STUDENTS IN PHD-GRANTING INSTITUTIONS BY FIELD, CITIZENSHIP, AND RACE/ETHNICITY, FALL 1988

Field	Total	U.S. citizens						Foreign
		Black non-Hispanic	American Indian/ Alaskan Native	Asian/ Pacific Islander	Hispanic	White non-Hispanic	Other or unknown	
Total, all surveyed fields	445,595	14,720	1,213	17,495	11,871	282,568	20,129	97,599
Total, science/engineering fields	393,580	12,341	1,024	16,169	9,967	242,573	17,609	93,897
Engineering, total	104,060	1,550	145	6,398	1,735	52,891	6,257	35,084
Aerospace	3,318	24	3	135	45	1,833	163	1,115
Agricultural	1,039	8	0	12	4	484	16	515
Biomedical	1,755	18	6	113	25	1,044	52	497
Chemical	6,618	84	24	334	135	3,382	144	2,515
Civil	15,056	198	22	649	288	7,462	555	5,882
Electrical	32,232	514	38	2,816	526	15,381	2,776	10,181
Engineering science	2,415	36	5	112	26	1,440	66	730
Industrial	12,036	300	15	476	278	7,632	566	2,769
Mechanical	16,216	200	12	912	217	7,863	1,122	5,890
Metallurgical/materials	4,272	25	4	264	47	2,094	92	1,746
Mining	489	2	0	9	5	237	4	232
Nuclear	1,303	13	3	50	30	700	18	489
Petroleum	742	3	1	27	15	311	5	380
Engineering, n.e.c.	6,569	125	12	489	94	3,028	678	2,143
Sciences, total	289,520	10,791	879	9,771	8,232	189,682	11,352	58,813
Physical sciences	33,047	569	52	1,249	626	18,313	1,164	11,074
Astronomy	731	6	0	37	6	509	7	166
Chemistry	18,632	371	30	733	438	10,502	817	5,641
Physics	13,312	171	20	464	180	6,929	332	5,216
Physical sciences, n.e.c.	372	21	2	15	2	273	8	51
Environmental sciences	14,128	108	29	220	224	10,643	500	2,404
Atmospheric sciences	940	7	0	47	9	623	7	247
Geosciences	8,563	50	24	82	115	6,631	344	1,317
Oceanography	2,033	19	0	58	78	1,400	53	425
Environmental sciences, n.e.c.	2,592	32	5	33	22	1,989	96	415
Mathematical sciences	19,044	432	32	751	333	10,139	983	6,374
Computer sciences	32,961	830	40	2,711	520	17,771	2,011	9,078
Agricultural sciences	11,008	145	41	213	266	7,185	297	2,861
Biological sciences	48,322	1,158	110	1,893	1,149	33,165	1,061	9,786
Anatomy	1,068	28	6	60	21	761	10	182
Biochemistry	4,958	82	11	259	98	3,117	48	1,343
Biology	12,654	397	30	458	491	9,019	537	1,722
Biometry/epidemiology	1,631	83	6	66	53	1,074	1	348
Biophysics	592	7	1	36	3	379	4	162
Botany	3,083	33	6	49	26	1,937	68	964
Cell biology	2,083	19	2	89	47	1,495	21	410
Ecology	1,028	9	1	15	13	819	35	136
Entomology/parasitology	1,240	10	2	34	29	828	17	320
Genetics	1,289	22	1	41	10	923	18	274
Microbiology	4,810	78	11	204	108	3,230	117	1,062
Nutrition	4,241	139	5	153	67	2,729	54	1,094
Pathology	1,400	43	5	50	24	995	15	268
Pharmacology	2,210	53	7	111	35	1,508	19	477
Physiology	2,220	61	5	166	42	1,463	26	457
Zoology	2,034	32	7	20	29	1,603	50	293
Biosciences, n.e.c.	1,781	62	4	82	53	1,285	21	274
Psychology	44,605	1,956	178	755	1,751	36,129	2,172	1,664
Social sciences	86,405	5,593	397	1,979	3,363	56,337	3,164	15,572
Agricultural economics	2,259	55	3	33	35	1,129	20	984
Anthropology	5,958	106	44	107	150	4,470	350	731
Economics (except agricultural)	12,329	327	82	338	293	5,639	480	5,170
Geography	3,211	59	6	59	59	2,422	134	472
History and philosophy of science	288	3	0	12	5	222	0	46
Linguistics	3,273	146	6	109	126	1,670	79	1,137
Political science	27,597	2,310	97	653	1,314	18,627	966	3,730
Sociology	7,035	487	30	183	231	4,239	227	1,638
Sociology/anthropology	991	103	0	8	14	579	130	157
Social sciences, n.e.c.	23,364	1,997	129	477	1,136	17,340	778	1,507
Health fields, total	52,015	2,379	189	1,326	1,904	39,995	2,520	3,702
Dentistry	1,085	26	0	47	18	773	53	168
Neurology	605	8	1	18	12	462	3	101
Nursing	19,060	827	58	345	630	16,257	651	292
Pharmaceutical sciences	2,592	78	2	111	45	1,288	164	904
Preventive medicine/community health	7,118	404	39	304	489	4,281	621	980
Speech pathology/audiology	7,811	372	21	125	229	6,513	230	321
Veterinary sciences	752	25	1	23	8	518	4	173
Clinical medicine, n.e.c.	2,056	82	7	102	60	1,417	115	273
Health related, n.e.c.	10,936	557	60	251	413	8,486	679	490

SOURCE: National Science Foundation SRS, 1990

TABLE 1-54

FULL-TIME SCIENCE/ENGINEERING GRADUATE STUDENTS IN DOCTORATE-GRANTING INSTITUTIONS BY FIELD AND SEX, 1974 - 1988

Year	Total	Eng	Phys	Envir	Math	Comp	Agri	Biol	Psych	Social	Health
TOTAL											
1974	195455	33635	21255	8381	10003	3736	7614	32175	18866	44549	15241
1975	210307	37105	21317	8919	10038	4114	8507	34541	19672	49507	16587
1976	214082	36489	21623	9439	10156	4379	9042	35231	21406	48573	17744
1977	217453	36675	21747	10019	9814	4196	9296	36228	21266	49433	18779
1978	216608	37057	21497	9997	9296	4426	9259	35974	20711	48409	19982
1979	223409	39344	21797	10171	9136	5073	9371	35837	20737	50680	21263
1980	230535	41939	22254	10265	9368	5900	9591	35817	21580	51518	22303
1981	234194	44817	22600	10491	9680	6465	9630	35454	21544	51402	22111
1982	236939	48687	23330	10873	10174	7908	9500	35226	21103	49211	20927
1983	243613	53516	24492	11466	10312	9267	9397	35187	21319	48080	20577
1984	246751	54768	25147	11283	10613	10108	9327	35826	21588	47194	20897
1985	250104	55686	25938	10883	11160	12374	8723	35860	21324	46787	21369
1986	259471	59862	27069	10916	11727	13389	8858	36826	21981	47452	21391
1987	264862	61194	27642	10151	12354	13578	8610	37734	22680	48699	22220
1988	268385	61656	27832	9893	12791	13811	8677	38235	23360	49208	22922
WOMEN											
1974	46278	1353	2534	1038	2019	505	870	9148	7425	13998	7388
1975	52222	1873	2680	1217	2121	599	1130	10021	8318	15663	8600
1976	57830	2038	2916	1503	2213	682	1423	10929	9239	16638	10249
1977	63150	2325	3051	1727	2133	676	1725	11854	9662	18261	11736
1978*	67200	2900	3100	1900	2000	800	1900	12000	9900	19700	13000
1979	71075	3477	3330	2147	1996	910	2111	12769	10125	20140	14070
1980	75930	3923	3533	2335	2140	1232	2292	13184	10962	21425	14904
1981	78901	4639	3815	2452	2358	1465	2242	13354	11371	22091	15114
1982	79743	5242	4203	2665	2552	1968	2372	13882	11499	20949	14411
1983	81445	5805	4632	2826	2666	2208	2369	14038	11721	20967	14213
1984	83340	6227	4893	2732	2737	2374	2431	14457	12304	20667	14518
1985	84437	6466	5193	2721	2969	2627	2255	14625	12452	20326	14803
1986	88058	7160	5535	2818	3154	2856	2272	15324	13134	20923	14882
1987	90365	7367	5794	2603	3313	2833	2250	15813	13660	21692	15040
1988	93846	7495	6132	2653	3461	2935	2344	16289	14557	22209	15771
PERCENT WOMEN											
1974	23.7	4.0	11.9	12.4	20.2	13.5	11.4	28.4	39.4	31.4	48.5
1975	24.8	5.0	12.6	13.6	21.1	14.6	13.3	29.0	42.3	31.6	51.8
1976	27.0	5.6	13.5	15.9	21.8	15.6	15.7	31.0	43.2	34.3	57.8
1977	29.0	6.3	14.0	17.2	21.7	16.1	18.6	32.7	45.4	36.9	62.5
1978	30.9	7.8	14.4	19.0	21.5	18.1	20.5	33.4	47.8	40.7	65.1
1979	32.8	9.4	15.5	21.5	21.5	20.6	22.8	35.5	48.9	41.6	70.4
1980	34.0	10.0	16.2	23.0	23.4	24.3	24.5	36.8	52.9	42.3	70.1
1981	33.7	10.4	16.9	23.4	24.4	22.7	23.3	37.7	52.8	43.0	68.4
1982	33.7	10.8	18.0	24.5	25.1	24.9	25.0	39.4	54.5	42.6	68.9
1983	33.4	10.8	18.9	24.6	25.9	23.8	25.2	39.9	55.0	43.6	69.1
1984	33.8	11.4	19.5	24.2	25.8	23.5	26.1	40.4	57.0	43.8	69.5
1985	33.8	11.6	20.0	25.0	26.6	21.2	25.9	40.8	58.4	43.4	69.3
1986	33.9	12.0	20.4	25.8	26.9	21.3	25.6	41.6	59.8	44.1	69.6
1987	34.1	12.0	21.0	25.6	26.8	20.9	26.1	41.9	60.2	44.5	67.7
1988	35.0	12.2	22.0	26.8	27.1	21.3	27.0	42.6	62.3	45.1	68.8

* Estimates. Data not collected by sex in 1978

 SOURCE: National Science Foundation, SRS

TABLE 1-55

FULL TIME SCIENCE/ENGINEERING GRADUATE STUDENTS IN PHD-GRANTING INSTITUTIONS BY FIELD, CITIZENSHIP AND RACE/ETHNICITY, FALL 1988

Field	Total	U.S. citizens						Foreign
		Black non-Hispanic	American Indian/ Alaskan Native	Asian/ Pacific Islander	Hispanic	White non-Hispanic	Other or unknown	
Total, all surveyed fields	268,385	6,544	669	10,407	6,576	155,826	7,661	80,702
Total, science/engineering fields	245,463	5,638	569	9,663	5,538	139,345	6,988	77,722
Engineering, total	61,656	735	73	3,506	920	25,681	2,310	28,431
Aerospace	2,517	16	2	76	31	1,298	68	1,026
Agricultural	879	6	0	11	4	372	13	473
Biomedical	1,402	16	4	76	18	836	21	431
Chemical	5,330	59	22	273	109	2,424	88	2,355
Civil	9,874	102	12	340	163	4,268	268	4,721
Electrical	17,162	246	13	1,489	261	6,477	783	7,893
Engineering science	1,421	7	2	48	15	696	33	620
Industrial	4,258	87	4	187	105	1,637	218	2,020
Mechanical	10,181	107	7	572	105	3,994	536	4,860
Metallurgical/materials	3,398	20	2	203	35	1,485	33	1,620
Mining	379	1	0	8	4	158	2	206
Nuclear	1,105	10	2	44	24	546	18	461
Petroleum	570	1	0	10	8	203	4	344
Engineering, n.e.c.	3,180	57	3	169	38	1,287	225	1,401
Sciences, total	183,807	4,903	496	6,157	4,618	113,664	4,678	49,291
Physical sciences	27,832	354	39	1,027	525	14,831	845	10,211
Astronomy	705	5	0	37	6	490	7	160
Chemistry	15,636	234	24	574	373	8,639	615	5,177
Physics	11,373	113	15	407	145	5,632	223	4,838
Physical sciences, n.e.c.	118	2	0	9	1	70	0	36
Environmental sciences	9,893	70	19	174	171	7,113	244	2,102
Atmospheric sciences	825	7	0	45	9	529	5	230
Geosciences	6,083	31	16	68	75	4,530	194	1,174
Oceanography	1,576	12	0	53	73	1,013	28	397
Environmental sciences, n.e.c.	1,404	20	3	8	14	1,041	17	301
Mathematical sciences	12,791	175	16	419	215	5,997	432	5,537
Computer sciences	13,811	244	10	1,005	140	5,893	437	6,082
Agricultural sciences	8,677	110	25	180	204	5,400	212	2,546
Biological sciences	38,235	693	77	1,586	876	25,510	595	8,898
Anatomy	935	26	5	56	20	688	10	180
Biochemistry	4,759	78	10	249	82	2,981	45	1,314
Biology	7,655	126	10	297	331	5,294	191	1,406
Biometry/epidemiology	1,176	58	5	48	38	726	1	300
Biophysics	544	6	1	34	3	337	4	159
Botany	2,649	24	5	44	21	1,624	52	879
Cell biology	2,029	18	2	89	46	1,451	20	402
Ecology	822	6	1	14	10	653	16	122
Entomology/parasitology	1,061	10	2	32	25	692	14	286
Genetics	1,146	17	1	37	8	809	14	260
Microbiology	4,332	75	11	184	99	2,869	107	987
Nutrition	2,765	60	3	102	39	1,595	33	933
Pathology	1,117	26	5	46	18	771	3	248
Pharmacology	2,070	48	7	107	33	1,401	15	459
Physiology	2,008	54	4	158	40	1,284	21	447
Zoology	1,708	25	4	19	26	1,337	36	261
Biosciences, n.e.c.	1,410	36	1	70	37	998	13	255
Psychology	23,360	881	92	510	977	18,911	778	1,211
Social sciences	49,208	2,376	218	1,256	1,510	30,009	1,135	12,704
Agricultural economics	1,878	37	2	29	27	917	18	848
Anthropology	4,234	81	28	91	114	3,112	153	655
Economics (except agricultural)	8,919	168	40	243	200	3,624	268	4,376
Geography	1,984	24	4	39	39	1,443	44	391
History and philosophy of science	266	3	0	12	5	201	0	45
Linguistics	2,456	84	6	91	80	1,191	51	953
Political science	12,082	684	36	325	378	7,609	277	2,773
Sociology	4,828	240	24	132	147	2,804	100	1,381
Sociology/anthropology	538	45	0	6	9	307	50	121
Social sciences, n.e.c.	12,023	1,010	78	288	511	8,801	174	1,161
Health fields, total	22,922	906	100	744	1,038	16,481	673	2,980
Dentistry	930	20	0	42	15	647	50	156
Neurology	588	7	1	18	11	448	3	100
Nursing	5,409	219	19	115	316	4,457	116	167
Pharmaceutical sciences	1,828	45	2	78	32	835	52	784
Preventive medicine/community health	3,930	201	34	196	279	2,207	196	817
Speech pathology/audiology	4,322	168	17	86	142	3,608	64	237
Veterinary sciences	589	13	1	21	7	390	0	157
Clinical medicine, n.e.c.	1,375	44	5	69	40	915	79	223
Health related, n.e.c.	3,951	189	21	119	196	2,974	113	339

SOURCE: Selected data on graduate science/engineering students and postdoctorates, Fall 1988, National Science Foundation

TABLE 1-56

FULL-TIME SCIENCE AND ENGINEERING GRADUATE STUDENTS WHO ARE U.S. CITIZENS IN ALL INSTITUTIONS BY AREA OF STUDY AND MINOROTY GROUP, 1980 - 1988

	Total Science/Eng		Engineering		Physical Sciences		Environmental Sciences		Mathematical Sciences		Computer Sciences		Life Sciences		Psychology		Social Sciences	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL U.S.																		
1980	248,871	100	75,350	100	17,174	100	9,570	100	6,648	100	4,521	100	63,543	100	25,482	100	46,383	100
1981	198,014	100	26,443	100	17,037	100	9,534	100	6,512	100	4,887	100	62,857	100	25,721	100	45,023	100
1982	197,374	100	28,816	100	17,555	100	9,789	100	6,935	100	5,[illegible]	100	60,522	100	24,739	100	43,037	100
1983	199,970	100	31,456	100	17,973	100	10,358	100	6,722	100	6,724	100	59,638	100	25,635	100	41,464	100
1984	200,407	100	32,230	100	18,250	100	10,224	100	6,781	100	7,052	100	60,011	100	25,064	100	40,795	100
1985	198,533	100	32,135	100	18,186	100	9,748	100	7,009	100	8,551	100	59,080	100	24,615	100	39,209	100
1986	201,038	100	33,610	100	18,266	100	9,512	100	7,253	100	9,176	100	58,812	100	25,353	100	39,056	100
1987	203,214	100	34,085	100	18,386	100	8,635	100	7,574	100	9,087	100	59,078	100	26,221	100	40,148	100
1988	204,799	100	34,380	100	18,182	100	8,212	100	7,781	100	8,901	100	59,823	100	27,253	100	40,267	100
BLACK																		
1980	6,807	2.7	472	0.6	323	1.9	66	0.7	141	2.1	67	1.5	1,633	2.6	1,017	4.0	2,888	6.2
1981	6,344	3.2	425	1.6	328	1.9	71	0.7	138	2.1	103	2.1	1,442	2.3	983	3.8	2,854	6.3
1982	7,225	3.7	519	1.8	418	2.4	76	0.8	174	2.5	198	3.3	1,697	2.8	1,021	4.1	3,122	7.3
1983	7,457	3.7	663	2.1	412	2.3	82	0.8	164	2.4	207	3.1	1,731	2.9	1,148	4.5	3,052	7.4
1984	7,345	3.7	700	2.2	437	2.4	84	0.8	187	2.8	204	2.9	1,720	2.9	1,111	4.4	2,902	7.1
1985	7,099	3.6	704	2.2	379	2.1	85	0.9	198	2.8	204	2.4	1,790	3.0	1,061	4.3	2,678	6.8
1986	7,137	3.6	770	2.3	391	2.1	65	0.7	244	3.4	289	3.1	1,726	2.9	1,090	4.3	2,562	6.6
1987	7,185	3.5	725	2.1	406	2.2	68	0.8	261	3.4	297	3.3	1,755	3.0	1,059	4.0	2,614	6.5
1988	7,870	3.8	847	2.5	442	2.4	77	0.9	222	2.9	329	3.7	1,959	3.3	1,168	4.3	2,826	7.0
INDIAN																		
1980	661	0.3	26	0.0	13	0.1	38	0.4	25	0.4	7	0.2	172	0.3	185	0.7	195	0.4
1981	516	0.3	66	0.2	15	0.1	10	0.1	5	0.1	3	0.1	127	0.2	48	0.2	242	0.5
1982	712	0.4	76	0.3	32	0.2	17	0.2	20	0.3	15	0.3	191	0.3	78	0.3	283	0.7
1983	770	0.4	98	0.3	40	0.2	24	0.2	12	0.2	11	0.2	222	0.4	93	0.4	270	0.7
1984	701	0.3	110	0.3	65	0.4	18	0.2	4	0.1	37	0.5	174	0.3	82	0.3	211	0.5
1985	626	0.3	68	0.2	28	0.2	19	0.2	6	0.1	45	0.5	172	0.3	89	0.4	199	0.5
1986	648	0.3	78	0.2	35	0.2	17	0.2	9	0.1	10	0.1	188	0.3	99	0.4	212	0.5
1987	692	0.3	66	0.2	36	0.2	15	0.2	21	0.3	15	0.2	192	0.3	113	0.4	234	0.6
1988	763	0.4	77	0.2	43	0.2	23	0.3	16	0.2	12	0.1	221	0.4	121	0.4	250	0.6
ASIAN																		
1980	5,394	2.2	1506	2.0	513	3.0	143	1.5	205	3.1	200	4.4	1,644	2.6	302	1.2	881	1.9
1981	4,924	2.5	1118	4.2	485	2.8	101	1.1	245	3.8	264	5.4	1,391	2.2	328	1.3	992	2.2
1982	5,657	2.9	1419	4.9	532	3.0	136	1.4	298	4.3	385	6.1	1,622	2.7	319	1.3	966	2.2
1983	6,416	3.2	1724	5.5	589	3.3	155	1.5	337	5.0	558	8.3	1,691	2.8	368	1.4	994	2.4
1984	7,176	3.6	2129	6.6	747	4.1	144	1.4	304	4.5	545	7.7	1,826	3.0	384	1.5	1097	2.7
1985	8,030	4.0	2575	8.0	790	4.3	155	1.6	413	5.9	735	8.6	1,916	3.2	381	1.5	1065	2.7
1986	8,830	4.4	2827	8.4	766	4.2	144	1.5	468	6.5	884	9.6	2,127	3.6	445	1.8	1169	3.0
1987	10,075	5.0	3217	9.4	896	4.9	158	1.8	504	6.7	1062	11.7	2,318	3.9	555	2.1	1365	3.4
1988	11,107	5.4	3680	10.7	1075	5.9	183	2.2	472	6.1	1147	12.9	2,617	4.4	580	2.1	1353	3.4
HISPANIC																		
1980	4,922	2.0	572	0.8	305	1.8	115	1.2	140	2.1	42	0.9	1,451	2.3	971	3.8	1326	2.9
1981	4,521	2.3	492	1.9	324	1.9	130	1.4	162	2.5	54	1.1	977	1.6	955	3.7	1427	3.2
1982	5,496	2.8	601	2.1	387	2.2	132	1.3	174	2.5	105	1.8	1,338	2.2	1032	4.2	1727	4.0
1983	6,461	3.2	774	2.5	449	2.5	145	1.4	205	3.0	105	1.6	1,776	3.0	1136	4.4	1871	4.5
1984	6,439	3.2	735	2.3	482	2.5	193	1.9	176	2.6	115	1.6	1,771	3.0	1148	4.6	1839	4.5
1985	6,537	3.3	756	2.4	530	2.9	184	1.9	165	2.4	130	1.5	2,036	3.4	1009	4.1	1727	4.4
1986	6,779	3.4	856	2.5	549	3.0	199	2.1	165	2.3	161	1.8	2,001	3.4	1141	4.5	1707	4.4
1987	7,038	3.5	854	2.5	514	2.8	198	2.3	194	2.6	161	1.8	2,087	3.5	1099	4.2	1931	4.8
1988	7,216	3.5	953	2.8	551	3.0	177	2.2	225	2.9	163	1.8	2,255	3.8	1123	4.1	1769	4.4

TABLE 1-57

FULL-TIME SCIENCE/ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY CITIZENSHIP AND FIELD, 1977 – 1988

Year	Total	Eng	All Sci	Sciences								
				Phys#	Envir	Math	Comp	Agri	Biol	Psych	Social	Health
Total Enrollment												
1977	236,164	37,565	177,941	22,505	10,556	10,365	4,604	9,567	38,603	25,710	56,031	20,658
1978	235,386	38,023	175,503	22,245	10,542	9,837	4,996	9,598	38,353	25,485	54,447	21,860
1979	242,379	40,393	178,848	22,535	10,724	9,668	5,853	9,794	38,218	25,865	56,191	23,138
1980	249,159	43,107	181,551	22,918	10,969	9,902	6,587	9,980	37,928	26,692	56,575	24,501
1981	252,997	46,257	182,157	23,308	11,038	10,154	7,445	10,076	37,582	26,725	55,829	24,583
1982	255,297	50,239	181,684	24,040	11,436	10,823	9,171	9,891	36,989	25,818	53,516	23,374
1983	262,495	54,327	185,054	25,205	12,049	10,964	10,687	9,836	37,112	26,729	52,472	23,114
1984	264,492	55,539	185,584	25,852	11,819	11,319	11,587	9,750	37,480	26,109	51,668	23,369
1985	267,305	56,293	187,138	26,669	11,439	11,833	14,101	9,097	37,362	25,776	50,861	23,874
1986	276,665	60,726	192,054	27,764	11,323	12,398	15,310	9,229	38,178	26,523	51,329	23,885
1987	282,620	62,229	195,585	28,414	10,543	13,068	15,572	8,983	38,776	27,435	52,794	24,806
1988	288,619	63,655	199,182	28,628	10,352	13,505	15,803	9,057	39,752	28,586	53,499	25,782
U.S. Citizens												
1977	197,716	23,922	154,523	17,809	9,417	7,910	3,495	7,679	34,755	24,968	48,490	19,271
1978	193,570	23,242	150,178	17,285	9,323	7,210	3,620	7,601	34,215	24,551	46,373	20,150
1979	195,492	23,733	150,661	17,188	9,402	6,772	4,082	7,653	33,778	24,717	47,069	21,098
1980	198,429	25,108	150,872	17,174	9,570	6,648	4,521	7,754	33,340	25,482	46,383	22,449
1981	198,018	26,443	149,146	17,037	9,534	6,513	4,887	7,701	32,730	25,721	45,023	22,429
1982	197,374	28,816	147,494	17,555	9,789	6,935	5,981	7,508	31,950	24,739	43,037	21,064
1983	199,970	31,456	147,823	17,973	10,358	6,722	6,724	7,368	31,579	25,635	41,464	20,691
1984	200,407	32,230	147,155	18,250	10,224	6,781	7,052	7,329	31,660	25,064	40,795	21,022
1985	198,533	32,135	145,067	18,186	9,748	7,009	8,551	6,759	30,990	24,615	39,209	21,331
1986	201,038	33,610	146,244	18,266	9,512	7,253	9,176	6,685	30,943	25,353	39,056	21,184
1987	203,214	34,085	147,102	18,386	8,635	7,574	9,087	6,366	30,685	26,221	40,148	22,027
1988	204,799	34,380	147,726	18,182	8,212	7,781	8,901	6,444	30,686	27,253	40,267	22,693
Percent Foreign												
1977	16.3	36.3	13.2	20.9	10.8	23.7	24.1	19.7	10.0	2.9	13.5	6.7
1978	17.8	38.9	14.4	22.3	11.6	26.7	27.5	20.8	10.8	3.7	14.8	7.8
1979	19.3	41.2	15.8	23.7	12.3	30.0	30.3	21.9	11.6	4.4	16.2	8.8
1980	20.4	41.8	16.9	25.1	12.8	32.9	31.4	22.3	12.1	4.5	18.0	8.4
1981	21.7	42.8	18.1	26.9	13.6	35.9	34.4	23.6	12.9	3.8	19.4	8.8
1982	22.7	42.6	18.8	27.0	14.4	35.9	34.8	24.1	13.6	4.2	19.6	9.9
1983	23.8	42.1	20.1	28.7	14.0	38.7	37.1	25.1	14.9	4.1	21.0	10.5
1984	24.2	42.0	20.7	29.4	13.5	40.1	39.1	24.8	15.5	4.0	21.0	10.0
1985	25.7	42.9	22.5	31.8	14.8	40.8	39.4	25.7	17.1	4.5	22.9	10.7
1986	27.3	44.7	23.9	34.2	16.0	41.5	40.1	27.6	19.0	4.4	23.9	11.3
1987	28.1	45.2	24.8	35.3	18.1	42.0	41.6	29.1	20.9	4.4	24.0	11.2
1988	29.0	46.0	25.8	36.5	20.7	42.4	43.7	28.9	22.8	4.7	24.7	12.0

SOURCE: National Science Foundation, SRS

TABLE 1-58
FOREIGN FULL TIME SCIENCE/ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY FIELD, 1980-1988

Field	1980	1981	1982	1983	1984 1/	1985 1/	1986 1/	1987 1/	1988
Total, all surveyed fields	50,730	54,979	57,923	62,525	64,085	68,772	75,627	79,406	83,820
Total, science/engineering fields	48,678	52,825	55,613	60,102	61,738	66,229	72,926	76,627	80,731
Engineering, total	17,999	19,814	21,423	22,871	23,309	24,158	27,116	28,144	29,275
Aerospace	568	601	577	752	739	716	811	813	1,031
Agricultural	293	298	341	341	327	353	424	446	473
Biomedical	135	158	199	195	220	194	280	376	431
Chemical	1,960	2,202	2,341	2,239	2,131	2,209	2,182	2,312	2,371
Civil	3,375	3,740	4,050	4,365	4,511	4,526	4,785	4,630	4,789
Electrical	4,297	4,785	5,112	5,840	5,996	6,639	7,713	8,081	8,205
Engineering science	363	372	440	495	484	469	591	595	622
Industrial	1,456	1,595	1,626	1,372	1,471	1,623	1,801	2,065	2,132
Mechanical	2,630	3,059	3,500	4,003	4,107	4,017	4,575	4,649	4,981
Metallurgical/materials	1,107	1,112	1,181	1,174	1,209	1,286	1,506	1,594	1,629
Mining	139	155	122	155	141	135	192	196	219
Nuclear	443	427	473	461	412	430	445	450	461
Petroleum	213	195	260	290	287	250	267	318	362
Engineering, n.e.c.	990	1,115	1,201	1,189	1,274	1,291	1,544	1,619	1,569
Sciences, total	30,679	33,011	34,190	37,231	38,429	42,071	45,810	48,483	51,456
Physical sciences	5,744	6,271	6,485	7,232	7,602	8,483	9,498	10,028	10,446
Astronomy	84	93	102	105	117	150	160	172	160
Chemistry	2,983	3,217	3,216	3,525	3,635	4,095	4,513	4,940	5,311
Physics	2,665	2,950	3,157	3,584	3,828	4,215	4,800	4,994	4,939
Physical sciences, n.e.c.	12	11	10	18	22	23	25	22	36
Environmental sciences	1,399	1,504	1,647	1,691	1,595	1,691	1,811	1,908	2,140
Atmospheric sciences	144	179	187	182	164	196	206	219	231
Geosciences	816	885	913	923	899	945	1,019	1,101	1,195
Oceanography	208	246	340	377	297	312	310	296	397
Environmental sciences, n.e.c.	231	194	207	209	235	238	276	292	317
Mathematical sciences	3,254	3,641	3,888	4,242	4,538	4,824	5,145	5,494	5,724
Computer sciences	2,066	2,558	3,190	3,963	4,535	5,550	6,134	6,485	6,902
Agricultural sciences	2,226	2,375	2,383	2,468	2,421	2,338	2,544	2,617	2,613
Biological sciences	4,588	4,852	5,039	5,533	5,820	6,372	7,235	8,091	9,066
Anatomy	83	86	88	74	58	91	121	153	180
Biochemistry	509	594	658	775	847	976	1,098	1,209	1,316
Biology	868	883	851	961	1,103	1,094	1,252	1,374	1,509
Biometry/epidemiology	144	160	150	157	123	173	223	263	300
Biophysics	56	61	70	80	80	93	120	125	159
Botany	535	539	595	612	619	627	757	777	899
Cell biology	67	82	103	123	147	189	275	333	402
Ecology	67	73	80	78	87	100	100	110	123
Entomology/parasitology	227	243	227	240	224	234	252	295	286
Genetics	98	92	114	145	134	166	205	244	264
Microbiology	418	418	435	512	545	653	725	818	993
Nutrition	781	834	841	821	891	925	905	967	961
Pathology	163	184	174	206	169	189	204	251	250
Pharmacology	186	199	243	245	256	264	333	396	459
Physiology	171	180	188	212	255	265	318	350	447
Zoology	136	130	131	142	144	178	188	223	261
Biosciences, n.e.c.	79	74	91	145	138	155	159	203	257
Psychology	1,210	1,004	1,079	1,094	1,045	1,161	1,170	1,214	1,333
Social sciences	10,192	10,806	10,479	11,008	10,873	11,652	12,273	12,646	13,232
Agricultural economics	754	770	702	765	764	768	759	737	870
Anthropology	396	428	386	402	386	445	536	582	657
Economics (except agricultural)	3,499	3,674	3,554	3,551	3,520	4,001	4,110	4,272	4,536
Geography	383	370	391	386	372	360	384	425	407
History and philosophy of science	25	30	35	40	42	51	39	41	45
Linguistics	745	753	710	850	838	943	961	965	990
Political science	2,356	2,509	2,519	2,744	2,565	2,612	2,962	2,921	2,967
Sociology	924	1,044	985	1,101	1,069	1,205	1,243	1,335	1,423
Sociology/anthropology	103	101	134	129	122	128	124	126	124
Social sciences, n.e.c.	1,009	1,127	1,063	1,040	1,135	1,139	1,155	1,242	1,213
Health fields, total	2,052	2,154	2,310	2,423	2,347	2,543	2,701	2,779	3,089
Dentistry	223	173	129	122	130	155	179	145	156
Neurology	15	15	14	27	29	34	48	69	101
Nursing	181	225	202	159	172	166	160	163	183
Pharmaceutical sciences	463	539	587	619	630	633	681	676	784
Preventive medicine/community health	584	580	695	678	638	770	771	785	830
Speech pathology/audiology	209	224	213	257	212	223	251	231	272
Veterinary sciences	113	118	93	111	110	133	138	153	161
Clinical medicine, n.e.c.	106	116	150	168	118	189	197	219	240
Health related, n.e.c.	158	164	227	282	308	240	276	338	362

1/ Includes estimated data for master's-granting institutions, which were surveyed on a sample basis from 1984 through 1987.

TABLE 1-59

SOURCE: Selected data on graduate science/engineering students and postdoctorates, Fall 1988, National Science Foundation

FULL-TIME SCIENCE AND ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY SEX AND SOURCE OF MAJOR SUPPORT, 1980 - 1988

	1980		1981		1982		1983		1984		1985		1986		1987		1988	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
MEN																		
All Sources	164,827	100	165,113	100	166,816	100	171,399	100	172,171	100	174,049	100	179,979	100	182,952	100	184,346	100
Federal Total	36,907	22.4	35,277	21.4	33,232	19.9	33,709	19.7	33,383	19.4	33,790	19.4	35,558	19.8	37,102	20.3	38,187	20.7
DoD	4,816	2.9	5,209	3.2	5,417	3.2	6,270	3.7	6,328	3.7	6,458	3.7	6,956	3.9	7,653	4.2	8,154	4.4
HHS Total	9,842	6.0	9,041	5.5	8,065	4.8	7,641	4.5	7,666	4.5	7,833	4.5	8,088	4.5	8,868	4.8	9,025	4.9
NIH	7,566	4.6	7,200	4.4	6,709	4.0	6,650	3.9	6,760	3.9	6,752	3.9	7,084	3.9	7,745	4.2	8,071	4.4
Other	2,276	1.4	1,841	1.1	1,356	0.8	991	0.6	906	0.5	1,081	0.6	1,004	0.6	1,123	0.6	954	0.5
NSF	7,738	4.7	7,514	4.6	7,617	4.6	7,756	4.5	7,987	4.6	8,068	4.6	8,635	4.8	8,946	4.9	9,218	5.0
USDA	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1525	0.9	1618	0.9	1899	1.0	1784	1.0
All Other Federal	14,511	8.8	13,513	8.2	12,133	7.3	12,042	7.0	11,402	6.6	9,906	5.7	10,261	5.7	9,736	5.3	10,006	5.4
Institutional	62,250	37.8	63,671	38.6	64,941	38.9	66,599	38.9	69,278	40.2	70,263	40.4	73,343	40.8	75,471	41.3	76,562	41.5
Other Outside	16,967	10.3	18,149	11.0	19,352	11.6	19,345	11.3	19,162	11.1	20,785	11.9	20,834	11.6	19,669	10.8	19,997	10.8
All Other U.S.	9,871	6.0	10,541	6.4	11,570	6.9	11,733	6.8	12,190	7.1	14079	8.1	14315	8.0	13,669	7.5	14,235	7.7
Foreign	7,096	4.3	7,608	4.6	7,782	4.7	7,612	4.4	6,972	4.0	6706	3.9	6519	3.6	6,000	3.3	5,762	3.1
Self Support	48,703	29.5	48,016	29.1	49,291	29.5	51,746	30.2	50,348	29.2	49211	28.3	50244	27.9	50,710	27.7	49,600	26.9
WOMEN																		
All Sources	84,332	100	87,884	100	88,481	100	91,096	100	92,321	100	93,256	100	96,686	100	99,668	100	104,273	100
Federal Total	17,611	20.9	16,853	19.2	15,251	17.2	14,814	16.3	15,280	16.6	16,088	17.3	16,731	17.3	17,132	17.2	18,041	17.3
DoD	470	0.6	487	0.6	547	0.6	758	0.8	855	0.9	890	1.0	1,005	1.0	1,146	1.1	1,259	1.2
HHS Total	10,113	12.0	9,346	10.6	8,326	9.4	7,649	8.4	7,773	8.4	8,388	9.0	8,641	8.9	8,654	8.7	9,241	8.9
NIH	4,203	5.0	4,241	4.8	4,310	4.9	4,327	4.7	4,363	4.7	4,498	4.8	4,914	5.1	5,336	5.4	5,843	5.6
Other	5,910	7.0	5,105	5.8	4,016	4.5	3,322	3.6	3,410	3.7	3,890	4.2	3,727	3.9	3,318	3.3	3,398	3.3
NSF	1,614	1.9	1,668	1.9	1,677	1.9	1,777	2.0	1,871	2.0	2,118	2.3	2,203	2.3	2,285	2.3	2,377	2.3
USDA	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	656	0.7	721	0.7	789	0.8	808	0.8
All Other Federal	5,414	6.4	5,352	6.1	4,701	5.3	4,630	5.1	4,781	5.2	4,036	4.3	4,161	4.3	4,258	4.3	4,356	4.2
Institutional	28,264	33.5	30,364	34.6	32,545	36.8	34,187	37.5	35,523	38.5	36,257	38.9	38,452	39.8	39,217	39.3	41,437	39.7
Other Outside	4,879	5.8	5,062	5.8	5,159	5.8	5,948	6.5	6,120	6.6	6,265	6.7	6,391	6.6	6,312	6.3	6,304	6.0
All Other U.S.	3,627	4.3	3,756	4.3	3,797	4.3	4,518	5.0	4,856	5.3	5107	5.5	5,145	5.3	5,102	5.1	5,073	4.9
Foreign	1,252	1.5	1,306	1.5	1,362	1.5	1,430	1.6	1,264	1.4	1158	1.2	1,246	1.3	1,210	1.2	1,231	1.2
Self Support	33,578	39.8	35,605	40.5	35,526	40.2	36,147	39.7	35,398	38.3	34646	37.2	35,112	36.3	37,007	37.1	38,491	36.9

SOURCE: Selected data on graduate science/engineering students and postdoctorates, Fall 1988, National Science Foundation

TABLE 1-60

FULL-TIME SCIENCE AND ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY SEX, SOURCE OF MAJOR SUPPORT, AND AREA OF STUDY, 1988

	Total Science/Eng		% Change	Engineering		Physical Sciences		Environmental Sciences		Mathematical Sciences		Computer Sciences		Life Sciences		Psychology		Social Sciences	
	No.	%	'87-88	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
MEN																			
All Sources	184,346	100	0.0	55,881	100	22,262	100	7,549	100	9,782	100	12,328	100	37,077	100	10,446	100	29,021	100
Federal Total	38,187	20.7	2.5	12,404	22.2	7,861	35.3	2,087	27.6	965	9.9	1,923	15.6	10,280	27.7	923	8.8	1,744	6.0
DoD	8,154	4.4	7.0	4,467	8.0	1,243	5.6	384	5.1	430	4.4	1,043	8.5	353	1.0	92	0.9	142	0.5
HHS Total	9,025	4.9	-0.7	469	0.8	1,524	6.8	33	0.4	21	0.2	59	0.5	6,297	17.0	447	4.3	175	0.6
NIH	8,071	4.4	1.8	415	0.7	1,411	6.3	13	0.2	19	0.2	59	0.5	5,753	15.5	308	2.9	93	0.3
Other	954	0.5	-17.5	54	0.1	113	0.5	20	0.3	2	0.0	0	0.0	544	1.5	139	1.3	82	0.3
NSF	9,218	5.0	3.1	3,321	5.9	2,977	13.4	931	12.3	379	3.9	559	4.5	721	1.9	107	1.0	223	0.8
USDA	1,784	1.0		166	0.3	23	0.1	28	0.4	11	0.1	9	0.1	1,319	3.6	5	0.0	223	0.8
All Other Federal	10,006	5.4	-13.8	3,981	7.1	2,094	9.4	711	9.4	124	1.3	253	2.1	1,590	4.3	272	2.6	981	3.4
Institutional	76,562	41.5	1.6	18,953	33.9	11,290	50.7	3,096	41.0	6,504	66.5	4,119	33.4	15,015	40.5	4,360	41.7	13,225	45.6
Other Outside	19,997	10.8	0.0	8,959	16.0	1,631	7.3	823	10.9	488	5.0	1,020	8.3	4,239	11.4	455	4.4	2,382	8.2
All Other U.S.	14,235	7.7	2.4	7,085	12.7	1,352	6.1	509	6.7	286	2.9	748	6.1	2,668	7.2	423	4.0	1,164	4.0
Foreign	5,762	3.1	-5.5	1,874	3.4	279	1.3	314	4.2	202	2.1	272	2.2	1,571	4.2	32	0.3	1,218	4.2
Self Support	49,600	26.9	-4.0	15,565	27.9	1,480	6.6	1,543	20.4	1,825	18.7	5266	42.7	7,543	20.3	4,708	45.1	11,670	40.2
WOMEN																			
All Sources	104,273	100	3.3	7,774	100	6,366	100	2,803	100	3,723	100	3,475	100	37,514	100	18,140	100	24,478	100
Federal Total	18,041	17.3	4.0	1,506	19.4	1,998	31.4	701	25.0	217	5.8	289	8.3	10,624	28.3	1,259	6.9	1,447	5.9
DoD	1,259	1.2	7.8	379	4.9	235	3.7	74	2.6	77	2.1	150	4.3	235	0.6	64	0.4	45	0.2
HHS Total	9,241	8.9	4.3	128	1.6	626	9.8	18	0.6	7	0.2	5	0.1	7,426	19.8	677	3.7	354	1.4
NIH	5,843	5.6	5.3	110	1.4	591	9.3	6	0.2	6	0.2	5	0.1	4,480	11.9	456	2.5	189	0.8
Other	3,398	3.3	2.6	18	0.2	35	0.5	12	0.4	1	0.0	0	0.0	2,946	7.9	221	1.2	165	0.7
NSF	2,377	2.3	3.9	432	5.6	691	10.9	302	10.8	84	2.3	81	2.3	496	1.3	126	0.7	165	0.7
USDA	808	0.8		22	0.3	12	0.2	16	0.6	8	0.2	0	0.0	652	1.7	20	0.1	78	0.3
All Other Federal	4,356	4.2	-13.6	545	7.0	434	6.8	291	10.4	41	1.1	53	1.5	1,815	4.8	372	2.1	805	3.3
Institutional	41,437	39.7	6.5	2,819	36.3	3,626	57.0	1,235	44.1	2,630	70.6	1,063	30.6	13,015	34.7	7,024	38.7	10,025	41.0
Other Outside	6,304	6.0	-3.3	1,198	15.4	346	5.4	218	7.8	113	3.0	292	8.4	2,338	6.2	605	3.3	1,194	4.9
All Other U.S.	5,073	4.9	-4.2	1,046	13.5	309	4.9	168	6.0	67	1.8	236	6.8	1,851	4.9	576	3.2	820	3.3
Foreign	1,231	1.2	-0.2	152	2.0	37	0.6	50	1.8	46	1.2	56	1.6	487	1.3	29	0.2	374	1.5
Self Support	38,491	36.9	0.9	2,251	29.0	396	6.2	649	23.2	763	20.5	1831	52.7	11,537	30.8	9,252	51.0	11,812	48.3

SOURCE: National Research Council, *Summary Report 1989: Doctorate Recipients from United States Universities*

TABLE 1-61

PRIMARY SOURCES OF SUPPORT FOR PHD RECIPIENTS BY BROAD FIELD, SEX, RACE/ETHNICITY AND CITIZENSHIP, 1989

Primary Source of Support	Total	Men	Women	U.S. Cit.	Perm. Res.	Temp. Res.	U.S. Citizens				
							Am. Ind.	Asian	Black	Hisp.	White
Total All Fields											
Personal	40.7	34.5	51.6	48.4	32.0	14.7	51.8	31.7	58.8	45.7	48.7
University	40.5	44.0	34.6	35.1	52.9	57.5	26.5	40.0	25.5	31.2	35.4
Federal	11.4	12.6	9.2	12.0	8.2	9.7	19.3	20.4	8.3	15.9	11.7
Other	7.4	8.9	4.6	4.5	7.0	18.1	2.4	7.9	7.4	7.2	4.2
Physical Sciences*											
Personal	14.1	14.0	14.3	18.1	11.8	5.3	23.5	15.5	25.8	11.3	18.1
University	59.8	59.1	63.0	54.4	70.0	70.1	47.1	44.7	38.7	51.6	55.4
Federal	20.0	20.5	17.7	22.3	15.5	15.7	23.5	30.1	22.6	29.0	21.7
Other	6.1	6.4	5.0	5.1	2.7	8.9	5.9	9.7	12.9	8.1	4.8
Engineering											
Personal	16.2	16.5	13.3	21.8	20.5	9.8	14.3	17.9	23.8	31.3	22.0
University	54.7	54.4	57.9	46.6	60.7	61.9	28.6	50.0	38.1	25.0	47.0
Federal	15.8	15.2	22.5	20.2	12.0	12.0	57.1	19.1	4.8	18.8	20.4
Other	13.2	13.9	6.3	11.4	6.8	16.4	0.0	13.0	33.3	25.0	10.5
Life Sciences											
Personal	25.1	23.5	27.7	28.5	25.8	11.5	0.0	22.6	18.8	17.1	29.3
University	43.9	44.5	42.9	41.4	50.2	52.4	62.5	37.1	47.8	39.5	41.2
Federal	22.6	21.9	23.7	26.6	13.1	8.7	37.5	36.3	23.2	36.8	26.2
Other	8.4	10.1	5.7	3.5	10.9	27.4	0.0	4.0	10.1	6.6	3.3
Social Sciences											
Personal	53.1	48.2	59.1	58.6	48.2	25.2	62.5	49.2	48.9	61.3	59.1
University	35.5	39.4	30.8	32.5	38.2	50.5	25.0	37.7	30.4	27.0	32.8
Federal	6.0	5.6	6.5	6.4	3.7	4.6	12.5	6.6	17.0	6.3	5.9
Other	5.4	6.9	3.6	2.5	9.9	19.6	0.0	6.6	3.7	5.4	2.2
Humanities											
Personal	48.4	49.1	47.6	51.7	41.6	24.0	57.1	61.3	43.1	44.6	52.1
University	45.1	43.4	47.2	43.3	52.6	56.4	28.6	35.5	37.3	44.6	43.6
Federal	2.2	2.5	1.9	2.2	1.7	2.5	14.3	0.0	3.9	4.1	2.0
Other	4.2	5.0	3.3	2.7	4.0	17.1	0.0	3.2	15.7	6.8	2.3
Education											
Personal	76.5	74.4	78.0	80.0	57.3	38.8	81.0	82.0	76.9	68.6	80.6
University	14.5	13.7	15.1	13.0	34.4	27.4	4.8	12.0	16.6	14.0	12.7
Federal	2.5	2.9	2.1	2.4	0.8	3.7	9.5	4.0	2.4	12.4	2.1
Other	6.5	8.9	4.7	4.6	7.6	30.1	4.8	2.0	4.2	5.0	4.7
Professional/Other											
Personal	53.9	52.6	56.2	61.6	43.9	27.5	100.0	54.2	71.1	61.9	61.1
University	36.2	36.0	36.5	30.6	50.0	53.3	0.0	37.5	15.6	23.8	31.3
Federal	2.2	2.3	2.0	2.6	0.0	1.4	0.0	0.0	0.0	9.5	2.7
Other	7.7	9.1	5.2	5.2	6.1	17.8	0.0	8.3	13.3	4.8	4.9

NOTE: A recipient's "primary" source of support is the source with the largest reported percentage. "Personal" includes loans as well as own earnings and contributions from the spouse/family. "Other" includes U.S. nationally competitive fellowships, business/employer funds, foreign government, and other nonspecified sources. Percentages in this table are based on the number of Ph.D.s with known primary support. See Technical Notes in Appendix C for rates of nonresponse to this question.

*Includes mathematics and computer sciences.

SOURCE: Doctorate Records File of the National Research Council

TABLE 2-1

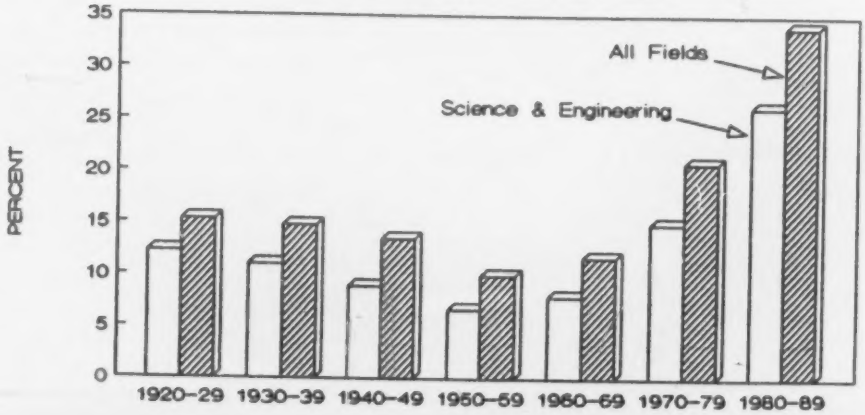
PhD AWARDS BY FIELD, DECADE AND SEX, 1920 – 1989

	DECADE							TOTAL
	1920–29	1930–39	1940–49	1950–59	1960–69	1970–79	1980–89	1920–89
All Fields (1)	11919	25654	30575	80262	162019	318100	318816	947345
Physical Sciences	3271	6687	8202	18745	34307	48182	46582	165976
Engineering	228	833	1439	5765	19042	29683	32329	89319
Life Sciences	2370	5081	5822	14495	26461	49344	57332	160905
Social Sciences*	1898	3556	4001	13692	25120	59762	59961	167990
Total S/E	7767	16157	19464	52697	104930	186971	196204	584190
Humanities	2408	5265	5168	11361	22685	46541	35694	129122
Professional Flds.	551	1018	1179	2717	6474	14128	18018	44085
Education	1153	3122	4759	13479	27531	70460	68698	189202
	WOMEN							
All Fields (1)	1826	3784	4115	7972	18964	66202	108074	210937
Physical Sciences	247	442	406	685	1577	3946	7076	14379
Engineering	2	6	7	20	77	424	1913	2449
Life Sciences	378	765	738	1318	3078	8921	18337	33535
Social Sciences*	325	562	580	1510	3604	14641	24126	45348
Total S/E	952	1775	1731	3533	8336	27932	51452	95711
Humanities	619	1291	1182	1758	4423	14625	15521	39419
Professional Flds.	38	78	113	249	798	2387	5769	9432
Education	209	615	1086	2431	5367	21258	35227	66193
	PERCENT WOMEN							
All Fields (1)	15.3	14.8	13.5	9.9	11.7	20.8	33.9	22.3
Physical Sciences	7.6	6.6	5.0	3.7	4.6	8.2	15.2	8.7
Engineering	0.9	0.7	0.5	0.3	0.4	1.4	5.9	2.7
Life Sciences	15.9	15.1	12.7	9.1	11.6	18.1	32.0	20.8
Social Sciences*	17.1	15.8	14.5	11.0	14.3	24.5	40.2	27.0
Total S/E	12.3	11.0	8.9	6.7	7.9	14.9	26.2	16.4
Humanities	25.7	24.5	22.9	15.5	19.5	31.4	43.5	30.5
Professional Flds.	6.9	7.7	9.6	9.2	12.3	16.9	32.0	21.4
Education	18.1	19.7	22.8	18.0	19.5	30.2	51.3	35.0

(1) Includes other and unspecified. * Includes Psychology

CHART 2-1

WOMEN AS % OF ALL & S/E PhDs 1920-29 - 1980-89



Source: NCES/NRC

Graph by CPST

Source: Doctorate Recipients from United States Universities, Summary Report 1989, National Research Council

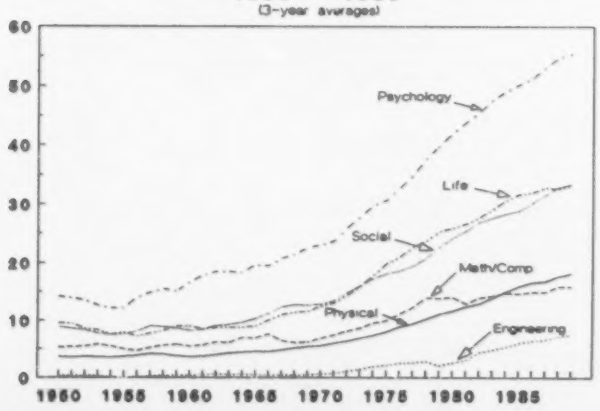
TABLE 2-2

DOCTORATE RECIPIENTS, 1989

FIELD	Total	Women	%W	Foreign Temp.		U.S. Minorities							
						Indian		Asian		Black		Hispanic	
				No.	%F	No.	%I	No.	%A	No.	%B	No.	%H
ALL FIELDS	34,319	12,510	36.5	6,590	19.2	93	0.3	1,255	3.7	946	2.8	680	2.0
PHYSICAL SCIENCES	5,460	1,026	18.8	1,531	28.0	18	0.3	253	4.6	44	0.8	83	1.5
Mathematics	861	156	18.1	343	39.8		0.0	24	2.8	8	0.9	11	1.3
Computer Science	612	107	17.5	179	29.2	2	0.3	52	8.5	1	0.2	4	0.7
Physics & Astronomy	1,278	118	9.2	427	33.4	5	0.4	59	4.6	5	0.4	16	1.3
Chemistry	1,971	497	25.2	461	23.4	5	0.3	95	4.8	26	1.3	43	2.2
Earth, Atmos, & Mar.	738	148	20.1	121	16.4	6	0.8	23	3.1	4	0.5	9	1.2
ENGINEERING	4,536	373	8.2	1,924	42.4	7	0.2	358	7.9	32	0.7	47	1.0
LIFE SCIENCES	6,343	2,426	38.2	1,142	18.0	12	0.2	246	3.9	99	1.6	104	1.6
Biological Sciences	4,106	1,534	37.4	599	14.6	7	0.2	198	4.8	52	1.3	72	1.8
Health Sciences	985	638	64.8	134	13.6	3	0.3	22	2.2	28	2.8	11	1.1
Agricultural Sciences	1,252	254	20.3	409	32.7	2	0.2	26	2.1	19	1.5	21	1.7
NATURAL SCIENCE & ENG	16,339	3,825	23.4	4,597	28.1	37	0.2	857	5.2	175	1.1	234	1.4
SOCIAL SCIENCES (incl Psy)	5,955	2,692	45.2	811	13.6	18	0.3	135	2.3	188	3.2	144	2.4
Psychology	3,209	1,800	56.1	103	3.2	11	0.3	55	1.7	95	3.0	88	2.7
Anthropology	324	148	45.7	31	9.6	1	0.3	4	1.2	6	1.9	8	2.5
Economics	872	171	19.6	313	35.9	1	0.1	35	4.0	11	1.3	12	1.4
Poli. Sci. & Int. Rel.	524	137	26.1	107	20.4	1	0.2	17	3.2	25	4.8	8	1.5
Sociology	435	222	51.0	92	21.1	1	0.2	13	3.0	26	6.0	22	5.1
Other Social Sciences	591	214	36.2	165	27.9	3	0.5	11	1.9	25	4.2	6	1.0
TOTAL SCIENCE & ENG.	22,294	6,517	29.2	5,408	24.3	55	0.2	992	4.4	363	1.6	378	1.7
NON-SCIENCE	12,025	5,993	49.8	1,182	9.8	38	0.3	263	2.2	583	4.8	302	2.5
HUMANITIES	3,558	1,618	45.5	342	9.6	7	0.2	84	2.4	81	2.3	108	3.0
PROFESSIONAL FIELDS	2,202	770	35.0	397	18.0	7	0.3	79	3.6	72	3.3	30	1.4
Business & Mgmt.	1,071	279	26.1	262	24.5	1	0.1	49	4.6	16	1.5	10	0.9
Communications	304	139	45.7	32	10.5	1	0.3	5	1.6	20	6.6	7	2.3
Other Professional Flds.	772	330	42.7	92	11.9	5	0.6	23	3.0	34	4.4	13	1.7
Other Fields	55	22	40.0	11	20.0		0.0	2	3.6	2	3.6		0.0
EDUCATION	6265	3605	57.5	443	7.1	24	0.4	100	1.6	430	6.9	164	2.6

CHART 2-2

PERCENT WOMEN S/E PhDs BY FIELD
1950 - 1989
(3-year averages)



Source: NCES/NRC Graph by CPST

Source: Summary Report 1988, Doctorate Recipients from United States Universities, National Research Council

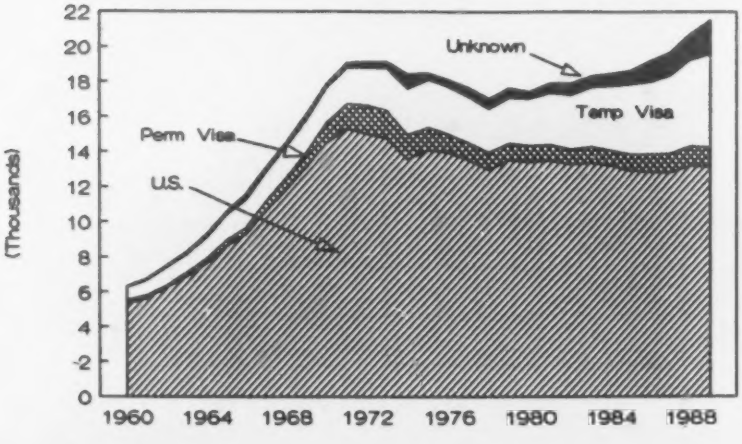
TABLE 2-3

DOCTORATE RECIPIENTS, 1988

FIELD	Total	Women	%W	Foreign Temp. No.	Foreign Temp. %F	U.S. Citizen & Perm. Visa: Indian No.	Indian %I	Asian No.	Asian %A	Black No.	Black %B	Hispanic No.	Hispanic %H
ALL FIELDS	33,405	11,776	35.3	6,168	18.5	93	0.3	1,232	3.7	951	2.8	692	2.1
PHYSICAL SCIENCES	5,309	880	16.6	1,477	27.8	11	0.2	229	4.3	41	0.8	76	1.4
Mathematics	749	121	16.2	304	40.6	2	0.3	33	4.4	3	0.4	4	0.5
Computer Science	514	56	10.9	174	33.9	1	0.2	44	8.6	2	0.4	2	0.4
Physics & Astronomy	1,302	130	10.0	421	32.3	1	0.1	52	4.0	12	0.9	14	1.1
Chemistry	2,018	429	21.3	441	21.9	5	0.2	85	4.2	21	1.0	48	2.4
Earth, Atmos, & Mar.	726	144	19.8	137	18.9	2	0.3	15	2.1	3	0.4	8	1.1
ENGINEERING	4,190	286	6.8	1,723	41.1	4	0.1	332	7.9	31	0.7	63	1.5
LIFE SCIENCES	6,143	2,261	36.8	1,062	17.3	18	0.3	232	3.8	103	1.7	109	1.8
Biological Sciences	4,106	1,501	36.6	553	13.5	6	0.1	170	4.1	48	1.2	76	1.9
Health Sciences	863	543	62.6	116	13.4	5	0.6	30	3.5	31	3.6	12	1.4
Agricultural Sciences	1,170	217	18.5	393	33.6	7	0.6	32	2.7	24	2.1	21	1.8
NATURAL SCIENCE & ENG	15,642	3,427	21.9	4,262	27.2	33	0.2	793	5.1	175	1.1	248	1.6
SOCIAL SCIENCES (incl Psy)	5,769	2,596	45.0	707	12.3	12	0.2	143	2.5	195	3.4	148	2.6
Psychology	3,058	1,675	54.8	84	2.7	2	0.1	7	0.2	6	0.2	13	0.4
Anthropology	325	169	52.0	28	8.6	0	0.0	47	14.5	15	4.6	12	3.7
Economics	825	163	19.8	290	35.2	0	0.0	8	1.0	18	2.2	6	0.7
Poli. Sci. & Int. Rel.	468	109	23.3	102	21.8	2	0.4	13	2.8	22	4.7	16	3.4
Sociology	449	238	53.0	68	15.1	7	1.6	47	10.5	100	22.3	93	20.7
Other Social Sciences	644	242	37.6	135	21.0	1	0.2	21	3.3	34	5.3	8	1.2
TOTAL SCIENCE & ENG.	21,411	6,023	28.1	4,969	23.2	45	0.2	936	4.4	370	1.7	396	1.8
HUMANITIES	3,553	1,574	44.3	346	9.7	7	0.2	69	1.9	88	2.5	112	3.2
PROFESSIONAL FIELDS	2,092	672	32.1	374	17.9	6	0.3	97	4.6	85	4.1	25	1.2
Business Admin	1,039	247	23.8	255	24.5	4	0.4	65	6.3	19	1.8	9	0.9
Communications	247	96	38.9	27	10.9	0	0.0	5	2.0	11	4.5	2	0.8
Other Professional Flds.	806	329	40.8	92	11.4	2	0.2	27	3.3	55	6.8	14	1.7
EDUCATION	6349	3507	55.2	479	7.5	35	0.6	130	2.0	408	6.4	159	2.5

CHART 2-3

SCIENCE & ENGINEERING PhDs BY CITIZENSHIP & VISA TYPE, 1960-89



Source: NRC/NSF

Graph by CPST

Source: Summary Reports: Doctorate Recipients from United States Universities, 1975 - 1978, National Research Council and 1989, Early Release Statistics, National Science Fondation

TABLE 2-4

SCIENCE/ENGINEERING PhD AWARDS BY CITIZENSHIP AND VISA TYPE 1960 - 1989

		U.S.		FOREIGN						
				Total		Immigrant		Non-Immigrant		Citizen-ship
YEAR	TOTAL	Number	%	Number	%	Number	%	Number	%	Unknown
1960	6,316	5,301	83.9	966	15.3	223	3.5	743	11.8	49
1961	6,757	5,632	83.4	1,032	15.3	182	2.7	850	12.6	93
1962	7,493	6,231	83.2	1,174	15.7	138	1.8	1,036	13.8	88
1963	8,279	6,884	83.2	1,258	15.2	234	2.8	1,024	12.4	137
1964	9,297	7,625	82.0	1,488	16.0	294	3.2	1,194	12.8	184
1965	10,542	8,590	81.5	1,797	17.0	357	3.4	1,440	13.7	155
1966	11,537	9,263	80.3	1,978	17.1	369	3.2	1,609	13.9	296
1967	13,065	10,561	80.8	2,253	17.2	568	4.3	1,685	12.9	251
1968	14,526	11,808	81.3	2,489	17.1	678	4.7	1,811	12.5	229
1969	16,075	13,080	81.4	2,721	16.9	842	5.2	1,879	11.7	274
1970	17,840	14,494	81.2	3,165	17.7	1,136	6.4	2,029	11.4	181
1971	19,078	15,300	80.2	3,514	18.4	1,411	7.4	2,103	11.0	264
1972	19,127	15,005	78.4	3,812	19.9	1,632	8.5	2,180	11.4	310
1973	19,121	14,788	77.3	4,004	20.9	1,565	8.2	2,439	12.8	329
1974	18,460	13,560	73.5	4,050	21.9	1,388	7.5	2,662	14.4	850
1975	18,488	14,107	76.3	4,015	21.7	1,257	6.8	2,758	14.9	366
1976	18,089	13,947	77.1	3,762	20.8	1,049	5.8	2,713	15.0	380
1977	17,641	13,538	76.7	3,609	20.5	982	5.6	2,627	14.9	494
1978	17,034	13,009	76.4	3,472	20.4	970	5.7	2,502	14.7	553
1979	17,589	13,524	76.6	3,526	20.5	945	5.4	2,657	15.1	539
1980	17,524	13,410	76.5	3,743	20.6	953	5.3	2,710	15.3	371
1981	17,996	13,544	75.5	3,919	21.0	893	5.0	2,962	16.0	533
1982	18,017	13,292	73.9	4,082	21.8	854	4.7	3,127	17.0	643
1983	18,393	13,403	73.1	4,361	23.2	898	4.9	3,400	18.3	629
1984	18,514	13,250	72.0	4,562	24.0	835	4.5	3,692	19.5	702
1985	18,711	12,946	69.4	5,002	26.1	929	4.9	4,028	21.2	763
1986	19,251	12,869	67.2	5,173	26.2	987	5.1	4,141	21.1	1,209
1987	19,702	12,819	65.4	5,576	27.6	1,086	5.5	4,450	22.1	1,307
1988	20,738	13,208	63.7	6,048	29.2	1,129	5.4	4,919	23.7	1,482
1989	21,516	13,158	61.2	6,439	29.9	1,106	5.1	5,333	24.8	1,919
TOTAL	476,716	358,146	75.1	102,990	21.6	25,890	5.4	76,703	16.1	15,580

Note: NSF data starting in 1979

SOURCE: Summary Reports: Doctorate Recipients from United States Universities, 1975 - 1988, National Research Council

TABLE 2-5

PhDs AWARDED TO U.S. MINORITIES & FOREIGN CITIZENS IN ALL FIELDS AND IN SCIENCE* AND ENGINEERING, 1975 – 1989

Year	Total Degrees	U.S. Citizens										Foreign Citizens			
		Total U.S.	Black		Hispanic		Am. Indian		Asian		All Minor.		Temp. Visa		Perm. Visa	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
ALL FIELDS																
1975	32,913	27,081	999	3.0	303	0.9	36	0.1	286	0.9	1,624	4.9	3,531	10.7	1,709	5.2
1976	32,923	27,269	1,095	3.3	340	1.0	40	0.1	334	1.0	1,809	5.5	3,518	10.7	1,491	4.5
1977	31,672	26,119	1,116	3.5	423	1.3	65	0.2	339	1.1	1,943	6.1	3,447	10.9	1,364	4.3
1978	30,850	25,291	1,033	3.3	473	1.5	60	0.2	390	1.3	1,956	6.3	3,416	11.1	1,343	4.4
1979	31,200	25,464	1,056	3.4	462	1.5	81	0.3	428	1.4	2,027	6.5	3,587	11.5	1,320	4.2
1980	30,982	25,221	1,032	3.3	421	1.4	75	0.2	458	1.5	1,986	6.4	3,644	11.7	1,291	4.2
1981	31,319	25,061	1,013	3.2	464	1.5	85	0.3	465	1.5	2,027	6.5	3,940	12.5	1,281	4.1
1982	31,048	24,391	1,047	3.4	535	1.7	77	0.2	452	1.5	2,111	6.8	44,204	13.5	1,228	3.9
1983	31,190	24,359	922	3.0	539	1.7	81	0.3	492	1.6	2,031	6.5	4,499	14.4	1,275	4.1
1984	31,253	24,027	953	3.0	536	1.7	74	0.2	512	1.6	2,073	6.6	4,832	15.4	1,224	3.9
1985	31,202	23,368	912	2.9	561	1.8	96	0.3	516	1.7	2,076	6.7	5,229	16.7	1,324	4.2
1986	31,770	23,080	822	3.0	571	2.1	99	0.3	530	3.3	2,769	8.7	5,276	16.6	1,432	4.5
1987	32,278	22,979	767	2.8	618	2.2	115	0.4	542	3.6	2,890	9.0	5,610	17.3	1,578	4.9
1988	33,456	23,273	813	2.4	596	1.8	94	0.3	613	1.8	2,105	6.3	6,192	18.5	1,618	4.8
1989	33,456	23,172	811	2.4	569	1.7	93	0.3	624	1.9	2,097	6.3	6,590	19.7	1,605	4.8
Totals	477,512	370,155	14,391	3.0	7,411	1.6	1,171	0.2	6,981	1.5	31,524	6.6	107,515	22.5	21,083	4.4
SCIENCE* AND ENGINEERING																
1975	19,048	14,475	261	1.4	137	0.7	14	0.1	201	1.1	613	3.2	2,797	14.7	1,290	6.8
1976	18,790	14,342	272	1.4	122	0.6	10	0.1	254	1.4	658	3.5	2,772	14.8	1,133	6.0
1977	18,281	13,889	305	1.7	162	0.9	29	0.2	241	1.3	737	4.0	2,678	14.6	1,028	5.6
1978	17,956	13,609	304	1.7	180	1.0	21	0.1	286	1.6	791	4.4	2,606	14.5	1,013	5.6
1979	18,247	13,524	315	1.7	180	1.0	27	0.1	315	1.7	837	4.6	2,657	14.9	945	5.4
1980	18,171	13,410	281	1.5	174	1.0	28	0.2	329	1.8	812	4.5	2,710	15.3	953	5.4
1981	18,662	13,544	298	1.6	199	1.1	31	0.2	336	1.8	864	4.6	2,962	16.0	893	5.0
1982	18,748	13,292	301	1.6	234	1.2	40	0.2	332	1.8	907	4.8	3,127	17.0	854	4.7
1983	18,799	13,403	294	1.6	239	1.3	29	0.2	355	1.9	917	4.9	3,400	18.3	898	4.9
1984	19,008	13,250	316	1.7	257	1.4	32	0.2	401	2.1	1,006	5.3	3,692	19.5	835	4.5
1985	19,164	12,946	293	1.5	254	1.3	40	0.2	380	2.0	967	5.0	4,028	21.3	929	4.9
1986	19,745	12,869	333	1.7	346	1.8	57	0.3	827	4.2	1,563	7.9	4,141	21.1	987	5.1
1987	20,203	12,819	335	1.7	347	1.7	55	0.3	946	4.7	1,683	8.3	4,450	22.1	1,086	5.5
1988	21,411	13,208	280	1.3	330	1.5	45	0.2	464	2.2	1,119	5.2	4,919	23.2	1,129	5.3
1989	21,411	13,158	280	1.3	330	1.5	45	0.2	464	2.2	1,119	5.2	5,333	24.9	1,106	5.2
Totals	287,644	201,738	4,468	1.6	3,491	1.2	503	0.2	6,131	2.1	14,593	5.1	52,272	18.2	15,079	5.2

* Includes Social and Behavioral Sciences

Source: Summary Report 1989, Doctorate Recipients from United States Universities, National Research Council

TABLE 2-6

DOCTORAL RECIPIENTS WHO ARE U.S. CITIZENS BY FIELD, SEX AND RACIAL/ETHNIC GROUP, 1989

FIELD	Total	Total U.S.		U.S. Women		Am Ind.		Asian		Black		Hispanic		Minorities		White	
		No.	%	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*
ALL FIELDS	34,319	23,172	67.5	9,883	42.7	93	0.4	624	2.7	811	3.5	569	2.5	2,097	9.0	20,688	89.3
PHYSICAL SCIENCES	5,460	3,222	59.0	677	21.0	18	0.6	117	3.6	35	1.1	70	2.2	240	7.4	2,896	89.9
Mathematics	861	393	45.6	93	23.7	0	0.0	13	3.3	6	1.5	8	2.0	27	6.9	351	89.3
Computer Science	612	337	55.1	72	21.4	2	0.6	18	5.3	1	0.3	4	1.2	25	7.4	295	87.5
Physics & Astronomy	1,278	673	52.7	58	8.6	5	0.7	33	4.9	5	0.7	12	1.8	55	8.2	596	88.6
Chemistry	1,971	1,293	65.6	340	26.3	6	0.5	42	3.2	20	1.5	40	3.1	108	8.4	1,161	89.8
Earth, Atmos, & Mar.	738	527	71.4	114	21.6	6	1.1	11	2.1	3	0.6	6	1.1	26	4.9	493	93.5
ENGINEERING	4,536	1,853	40.9	246	13.3	7	0.4	172	19.0	23	43.0	33	1.8	235	12.7	1,574	84.9
LIFE SCIENCES	6,343	4,507	71.1	1,873	41.6	12	0.3	138	3.1	75	1.7	83	1.8	308	6.8	4,116	91.3
Biological Sciences	4,106	3,100	75.5	1,179	38.0	7	0.2	120	3.9	44	1.4	59	1.9	230	7.4	2,816	90.8
Health Sciences	985	722	73.3	517	71.6	3	0.4	11	1.5	24	3.3	10	1.4	48	6.6	667	92.4
Agricultural Sciences	1,252	685	54.7	177	25.8	2	0.3	7	1.0	7	1.0	14	2.0	30	4.4	633	92.4
SOCIAL SCIENCES (incl Psy)	5,955	4,195	70.4	2,132	50.8	18	0.4	71	1.7	163	3.9	124	3.0	376	9.0	3,761	89.7
Anthropology	324	250	77.2	116	46.4	1	0.4	3	1.2	6	2.4	6	2.4	16	6.4	225	90.0
Economics	872	415	47.6	112	27.0	1	0.2	15	3.6	4	1.0	10	2.4	30	7.2	376	90.6
Poli. Sci. & Int. Rel.	524	361	68.9	103	28.5	1	0.3	4	1.1	14	3.9	6	1.7	25	6.9	332	92.0
Sociology	435	281	64.6	167	59.4	1	0.4	7	2.5	25	8.9	16	5.7	49	17.4	228	81.1
Other Social Sciences	591	288	48.7	152	52.8	3	1.0	4	1.4	20	6.9	4	1.4	31	10.8	254	88.2
Psychology	3,209	2,600	81.0	1,482	57.0	11	0.4	38	1.5	94	3.6	82	3.2	225	8.7	2,346	90.2
HUMANITIES	3,558	2,720	76.4	1,259	46.3	7	0.3	40	1.5	72	2.6	83	3.1	202	7.4	2,460	90.4
History	535	430	80.4	145	33.7	1	0.2	6	1.4	17	4.0	14	3.3	38	8.8	384	89.3
Amer. & Eng. Lang.& Lit.	621	605	97.4	358	59.2	3	0.5	4	0.7	15	2.5	10	1.7	32	5.3	554	91.6
Foreign Language	530	279	52.6	219	78.5	0	0.0	4	1.4	10	3.6	31	11.1	45	16.1	229	82.1
Other Humanities	1,872	1,406	75.1	537	38.2	3	0.2	26	1.8	30	2.1	28	2.0	87	6.2	1,293	92.0
EDUCATION	6,265	5,194	82.9	3,086	59.4	24	0.5	55	1.1	389	7.5	151	2.9	619	11.9	4,532	87.3
PROFESSIONAL FIELDS	2,202	1,481	67.3	610	41.2	7	0.5	31	2.1	54	3.6	25	1.7	117	7.9	1,349	91.1
Business & Management	1,071	659	61.5	224	34.0	1	0.2	15	2.3	12	4.0	7	1.1	35	5.3	615	93.3
Communications	304	225	74.0	114	50.7	1	0.4	3	1.3	13	5.8	6	2.7	23	10.2	199	88.4
Other Professional Flds.	772	597	77.3	272	45.6	5	0.8	13	2.2	29	4.9	12	2.0	59	9.9	535	89.6

* percent of U.S. citizens

Source: Summary Report 1988, Doctorate Recipients from United States Universities, National Research Council

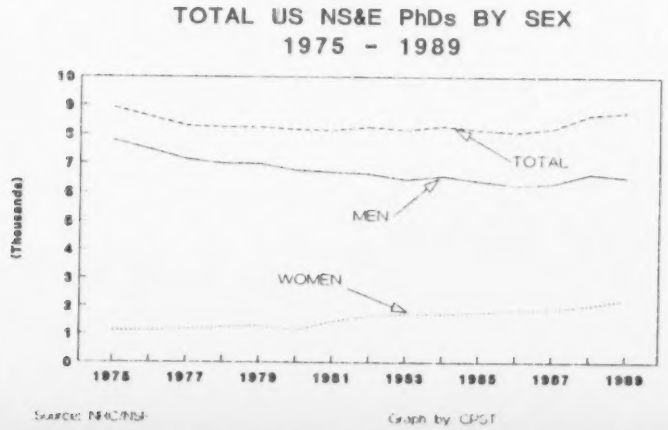
TABLE 2-7

DOCTORAL RECIPIENTS WHO ARE U.S. CITIZENS BY FIELD AND RACIAL/ETHNIC GROUP
1988

FIELD	Totals All	Totals U.S.	% U.S.	Am Ind. No.	Am Ind. %*	Asian No.	Asian %*	Black No.	Black %*	Hispanic No.	Hispanic %*	White No.	White %*
ALL FIELDS	33,456	22,789	68.1	93	0.4	612	2.7	805	3.5	594	2.6	20,685	90.7
PHYSICAL SCIENCES	5,309	3,136	59.1	11	0.4	111	3.5	32	1.0	69	2.2	2,913	92.9
Physics & Astronomy	1,302	689	52.9	1	0.1	19	2.8	11	1.6	13	1.9	645	93.6
Chemistry	2,018	1,343	66.6	5	0.4	47	3.5	17	1.3	43	3.2	1,231	91.7
Earth, Atmos, & Mar.	726	496	68.3	2	0.4	8	1.6	2	0.4	8	1.6	476	96.0
Mathematics	749	331	44.2	2	0.6	17	5.1	1	0.3	3	0.9	308	93.1
Computer Science	514	277	53.9	1	0.4	20	7.2	1	0.4	2	0.7	253	91.3
ENGINEERING	4,190	1,734	41.4	4	0.2	141	19.0	19	43.0	43	2.5	1,527	88.1
LIFE SCIENCES	6,143	4,319	70.3	18	0.4	127	2.9	71	1.6	84	1.9	4,019	93.1
Biological Sciences	4,106	3,070	74.8	6	0.2	100	3.3	36	1.2	61	2.0	2,867	93.4
Health Sciences	867	642	74.0	5	0.8	16	2.5	25	3.9	10	1.6	586	91.3
Agricultural Sciences	1,170	607	51.9	7	1.2	11	1.8	10	1.6	13	2.1	566	93.2
SOCIAL SCIENCES (incl Psy)	5,769	4,252	73.7	12	0.3	85	2.0	158	3.7	133	3.1	3,864	90.9
Psychology	3,057	2,611	85.4	7	0.3	37	1.4	96	3.7	89	3.4	2,382	91.2
Anthropology	325	254	78.2	2	0.8	3	1.2	5	2.0	10	3.9	234	92.1
Economics	825	421	51.0	0	0.0	22	5.2	11	2.6	8	1.9	380	90.3
Poli. Sci. & Int. Rel.	468	261	55.8	0	0.0	4	1.5	7	2.7	6	2.3	244	93.5
Sociology	449	311	69.3	2	0.6	8	2.6	14	4.5	13	4.2	274	88.1
Other Social Sciences	645	394	61.1	1	0.3	11	2.8	25	6.3	7	1.8	350	88.8
HUMANITIES	3,553	2,743	77.2	7	0.3	37	1.3	77	2.8	94	3.4	2,528	92.2
History	603	488	80.9	1	0.2	10	2.0	8	1.6	13	2.7	456	93.4
Amer. & Eng. Lang.& Lit.	925	906	97.9	3	0.3	11	1.2	26	2.9	21	2.3	845	93.3
Foreign Lang. & Lit.	443	273	61.6	0	0.0	5	1.8	3	1.1	46	16.8	219	80.2
Other Humanities	1,682	1,076	64.0	3	0.3	11	1.0	40	3.7	14	1.3	1008	93.7
EDUCATION	6,349	5,214	82.1	35	0.7	82	1.6	370	7.1	152	2.9	4,575	87.7
PROFESSIONAL FIELDS	2,092	1,391	66.5	6	0.4	29	2.1	78	5.6	19	1.4	1,259	90.5
Business & Management	1,039	598	57.6	4	0.7	16	2.7	16	4.0	4	0.7	558	93.3
Communications	247	184	74.5	0	0.0	1	0.5	10	5.4	2	1.1	171	92.9
Other Professional Flds.	806	582	72.2	2	0.3	12	2.1	52	8.9	13	2.2	503	86.4

* percent of U.S. citizens

CHART 2-4



SOURCE: Summary Reports: Doctoral Recipients from United States Universities, 1975 - 1989, National Research Council

TABLE 2-8

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 - 1989

Year	Total*	Men*	Women*	%W	Am. Ind. Men	Am. Ind. Women	Asian Men	Asian Women	Black Men	Black Women	Hispanic Men	Hispanic Women	% Min	White Men	White Women
TOTAL ALL FIELDS															
1975	27081	20662	6419	24	27	9	222	64	650	349	242	61	6.3	18636	5716
1976	27269	20427	6842	25	31	9	244	90	652	443	253	87	6.9	18371	6002
1977	26119	19155	6964	27	43	22	251	88	684	432	310	113	7.8	17011	6054
1978	25291	17936	7355	29	50	10	287	103	584	449	317	156	7.7	15573	6238
1979	25464	17580	7884	31	56	25	311	117	551	505	308	154	8.0	15261	6659
1980	25221	16875	8346	33	46	29	313	145	499	533	256	156	7.8	14848	7145
1981	25061	16360	8701	35	56	29	315	150	499	514	275	189	8.1	14459	7521
1982	24391	15562	8829	36	44	33	281	171	483	564	344	191	8.7	13990	7690
1983	24359	15120	9239	38	50	31	312	180	413	509	288	251	8.4	13610	8090
1984	24027	14730	9297	39	54	20	338	174	427	526	314	222	8.6	13171	8179
1985	23368	14221	9147	39	40	56	329	187	379	533	300	261	8.9	12808	7953
1986	23080	13635	9445	41	58	41	347	183	322	500	302	269	8.8	12307	8321
1987	22979	13572	9407	41	62	53	369	173	317	450	332	286	8.9	12165	8294
1988	23273	13714	9559	41	52	42	413	200	315	498	322	274	9.1	12334	8436
1989	23172	13289	9883	43	48	45	440	184	323	488	306	263	9.0	11890	8798
Total	370155	242838	127317	34	717	454	4772	2209	7098	7293	4469	2933	8.1	216434	111096
LIFE SCIENCES															
1975	3921	3085	836	21	1	1	33	21	37	19	34	5	3.9	2880	770
1976	3989	3154	835	21	3	0	54	23	40	31	26	3	4.5	2904	755
1877	3891	3040	851	22	7	1	41	22	30	34	22	9	4.3	2814	762
1978	4029	3076	953	24	8	0	64	26	45	28	31	14	5.4	2742	833
1979	4197	3129	1068	25	3	0	69	36	29	33	28	14	5.1	2799	932
1980	4415	3219	1196	27	5	2	66	36	37	28	24	12	4.8	2889	1069
1981	4533	3225	1308	29	9	4	72	37	31	42	34	14	5.4	2925	1163
1982	4610	3203	1407	31	7	5	65	47	33	36	41	21	5.5	2955	1265
1983	4437	2966	1471	33	6	2	75	57	30	34	24	24	5.7	2754	1328
1984	4565	3047	1518	33	9	3	77	56	36	39	33	21	6.0	2802	1369
1985	4463	2919	1544	35	9	10	79	49	37	33	43	32	6.5	2684	1396
1986	4349	2735	1614	37	11	12	91	62	28	36	39	33	7.2	2510	1454
1987	4241	2632	1609	38	10	6	88	57	35	43	45	32	7.5	2391	1445
1988	4401	2631	1770	40	9	9	80	48	26	46	56	28	6.9	2413	1622
1989	4507	2634	1873	42	5	7	83	55	32	43	57	26	6.8	2396	1720
Total	64548	44695	19853	31	102	62	1037	632	506	525	537	288	5.7	40858	17883

*Includes individuals whose racial/ethnic group is not known.

SOURCE: Summary Reports: Doctoral Recipients from United States Universities, 1975 - 1989, National Research Council

TABLE 2-8 (continued)

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1989

Year	Total*	Men*	Women*	%W	Am. Ind.		Asian		Black		Hispanic		%	White	
					Men	Women	Men	Women	Men	Women	Men	Women	Min	Men	Women
PHYSICAL SCIENCES*															
1975	2809	2606	203	7	0	0	37	2	28	3	18	1	3.2	2393	186
1976	2683	2466	217	8	0	0	44	11	17	6	13	1	3.4	2268	194
1977	2630	2413	217	8	6	0	43	4	29	3	35	4	4.7	2145	199
1978	2496	2264	232	9	4	0	57	7	34	5	19	2	5.1	1955	204
1979	2572	2308	264	10	3	0	48	8	32	4	23	7	4.9	2015	227
1980	2396	2110	286	12	4	1	51	10	12	2	18	5	4.3	1854	254
1981	2428	2157	271	11	1	0	44	6	19	3	28	4	4.3	1921	246
1982	2519	2163	356	14	3	0	44	24	18	5	19	8	4.8	2013	312
1983	2547	2181	366	14	8	0	54	20	18	2	20	13	5.3	2000	322
1984	2545	2146	399	16	4	0	63	22	27	3	31	8	6.2	1947	356
1985	2485	2074	411	17	4	0	60	24	20	5	24	6	5.8	1899	366
1986	2436	2026	410	17	4	3	60	21	16	4	31	9	6.1	1851	364
1987	2506	2061	445	18	5	2	60	16	13	5	36	15	6.1	1881	402
1988	2609	2131	478	18	6	2	57	17	23	7	48	17	6.8	1932	428
1989	2492	1980	512	21	14	2	71	15	20	8	41	17	7.5	1782	468
Total	38153	33086	5067	13	66	10	793	207	326	65	404	117	7.5	29856	4528
MATHEMATICS & COMPUTER SCIENCE															
1975	848	761	87	10	3	0	9	2	8	2	7	1	3.8	696	80
1976	748	663	85	11	0	0	12	3	5	0	9	0	3.9	601	81
1977	714	623	91	13	1	0	10	4	10	0	6	1	4.5	566	83
1978	704	606	98	14	0	1	10	7	10	2	5	0	5.0	536	85
1979	715	597	118	17	1	0	15	6	12	0	4	3	5.7	531	103
1980	676	584	92	14	0	0	13	1	6	5	4	0	4.3	525	82
1981	650	550	100	15	1	0	17	7	7	2	3	1	5.8	495	88
1982	601	512	89	15	2	0	11	2	5	2	6	1	4.8	472	81
1983	591	488	103	17	1	0	15	4	3	3	2	2	5.1	442	93
1984	585	486	99	17	3	0	19	2	3	2	13	1	7.4	429	92
1985	565	471	94	17	0	0	14	2	5	0	8	4	5.8	421	86
1986	568	462	106	19	0	1	24	2	2	3	10	3	7.9	405	97
1987	587	473	114	19	2	1	20	8	9	2	11	2	9.4	410	100
1988	626	528	98	16	3	0	32	5	3	0	5	0	7.7	468	93
1989	730	565	165	23	1	1	26	5	4	3	5	7	7.1	502	144
Total	9908	8369	1539	16	18	4	247	60	92	26	98	26	5.8	7499	1388

*Includes Physics and Astronomy, Chemistry, and Earth, Atmospheric, and Marine Sciences

*Includes individuals whose racial/ethnic group is not known.

SOURCE: Summary Reports: Doctoral Recipients from United States Universities, 1975 - 1989, National Research Council

TABLE 2-8 (continued)

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1989

Year	Total*	Men*	Women*	%W	Am. Ind. Men	Am. Ind. Women	Asian Men	Asian Women	Black Men	Black Women	Hispanic Men	Hispanic Women	% Min	White Men	White Women
	ENGINEERING														
1975	1716	1684	32	2	1	0	60	1	11	0	15	0	5.1	1522	31
1976	1557	1523	34	2	0	0	57	2	12	0	15	0	5.5	1389	31
1977	1472	1430	42	3	1	0	66	1	10	1	18	0	6.6	1266	38
1978	1261	1231	30	2	2	0	63	0	9	0	19	0	7.4	1047	27
1979	1293	1254	39	3	3	0	69	0	16	1	14	1	8.0	1052	33
1980	1255	1191	64	5	3	0	71	2	9	2	17	1	8.4	1015	53
1981	1170	1117	53	5	4	0	71	6	16	0	12	0	9.3	966	43
1982	1169	1095	74	6	3	0	69	3	9	0	22	1	9.2	946	69
1983	1163	1080	83	7	0	0	63	3	18	1	15	3	8.9	943	73
1984	1239	1151	88	7	3	0	79	16	11	1	18	4	10.7	997	65
1975	1279	1160	119	9	1	0	76	14	16	3	16	0	9.9	1000	97
1986	1383	1241	142	10	5	1	74	6	10	4	22	3	9.0	1104	125
1987	1557	1408	149	10	7	0	124	11	11	1	21	3	11.4	1198	132
1988	1780	1602	178	10	4	0	132	9	15	4	37	6	11.6	1374	155
1989	1853	1607	246	13	5	2	149	23	20	3	27	6	12.7	1365	209
Total	21147	19774	1373	6	42	3	1223	97	193	21	288	28	9.0	17184	1181
	HUMANITIES														
1975	4492	2975	1517	34	3	2	17	13	60	27	40	24	4.1	2679	1384
1976	4374	2873	1501	34	2	1	15	18	53	38	47	24	4.5	2581	1347
1977	4053	2572	1481	37	3	2	25	13	65	30	65	38	5.9	2280	1324
1978	3780	2349	1431	38	7	1	17	12	48	32	55	54	6.0	2066	1266
1979	3652	2244	1408	39	7	3	29	16	63	56	60	47	7.7	1952	1203
1980	3394	2023	1371	40	1	2	23	17	56	41	39	40	6.5	1813	1207
1981	3224	1886	1338	42	8	4	19	14	43	41	49	43	6.9	1679	1190
1982	3023	1705	1318	44	2	4	14	14	46	50	55	52	7.8	1534	1169
1983	2984	1656	1328	45	4	2	16	19	36	37	46	50	7.0	1503	1190
1984	2962	1607	1355	46	3	2	13	15	45	49	57	42	7.6	1438	1215
1985	2859	1608	1251	44	2	6	27	17	31	36	52	45	7.6	1454	1122
1986	2731	1478	1253	46	6	1	10	20	29	42	38	38	6.7	1366	1132
1987	2732	1472	1260	46	7	4	8	17	31	42	56	40	7.5	1337	1132
1988	2794	1533	1261	45	1	6	17	20	38	39	40	54	7.7	1404	1128
1989	2720	1461	1259	46	2	5	24	16	30	42	44	39	7.4	1324	1136
Total	49774	29442	20332	41	58	45	274	241	674	602	743	630	6.6	26410	18145

*Includes individuals whose racial/ethnic group is not known.

SOURCE: Summary Reports: Doctoral Recipients from United States Universities, 1975 - 1989, National Research Council

TABLE 2-8 (continued)

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1989

Year	Total*	Men*	Women*	%W	Am. Ind. Men	Am. Ind. Women	Asian Men	Asian Women	Black Men	Black Women	Hispanic Men	Hispanic Women	% Min	White Men	White Women
SOCIAL SCIENCES															
1975	2629	2060	569	22	2	1	21	2	55	22	20	6	4.9	1836	519
1976	2638	2030	608	23	3	0	25	6	55	20	25	3	5.2	1801	556
1877	2408	1857	551	23	3	1	25	4	69	27	28	5	6.7	1634	490
1978	2315	1697	618	27	3	0	23	12	47	28	33	13	6.9	1476	527
1979	2224	1587	637	29	5	2	22	13	51	25	38	6	7.3	1350	557
1980	2133	1518	615	29	5	2	29	10	31	34	35	7	7.2	1329	540
1981	2064	1454	610	30	3	0	29	14	41	26	34	10	7.6	1259	536
1982	1925	1324	601	31	3	1	30	12	53	28	36	10	9.0	1152	535
1983	2003	1330	673	34	2	1	17	12	48	27	39	14	8.0	1167	602
1984	1848	1189	659	36	3	1	25	10	45	34	38	9	8.9	1041	589
1985	1775	1106	669	38	3	5	16	12	40	33	37	20	9.4	967	579
1986	1813	1097	716	39	8	3	25	12	34	28	33	17	8.8	961	639
1987	1657	1033	624	38	4	2	25	12	23	25	35	19	8.8	917	551
1988	1680	993	687	41	4	1	28	20	34	28	21	24	9.5	881	603
1989	1595	945	650	41	5	2	22	11	30	39	23	19	9.5	844	571
Total	30707	21220	9487	31	56	22	362	162	656	424	475	182	7.6	18615	8394
PSYCHOLOGY															
1975	2552	1746	806	32	4	1	5	8	51	25	27	3	4.9	1588	739
1976	2727	1832	895	33	4	0	11	6	49	37	22	5	4.9	1682	829
1877	2774	1767	1007	36	3	*	13	13	54	38	23	11	5.8	1605	908
1978	2804	1770	1034	37	2	1	8	9	50	46	29	15	5.7	1584	908
1979	2850	1700	1150	40	7	3	19	10	44	68	25	17	6.8	1522	1000
1980	2859	1637	1222	43	3	3	14	26	52	63	30	21	7.4	1461	1072
1981	3111	1746	1365	44	4	5	16	17	47	64	30	29	6.8	1597	1222
1982	2876	1556	1320	46	10	6	6	19	49	63	42	27	7.7	1424	1183
1983	3044	1576	1468	48	7	2	19	16	35	75	41	43	7.8	1434	1306
1984	2935	1440	1495	51	5	1	16	16	41	74	41	40	8.0	1302	1350
1985	2805	1396	1409	50	5	5	18	16	39	62	25	39	7.5	1284	1268
1986	2766	1330	1436	52	4	5	15	17	36	66	43	38	8.1	1215	1294
1987	2747	1259	1488	54	4	12	14	24	30	58	31	61	8.5	1159	1317
1988	2666	1189	1477	55	3	4	13	24	45	54	37	52	8.7	1077	1326
1989	2600	1118	1482	57	3	8	20	18	34	60	27	55	8.7	1023	1323
Total	42116	23062	19054	45	68	62	207	239	656	853	473	456	7.2	20957	17045

*Includes individuals whose racial/ethnic group is not known.

SOURCE: Summary Reports: Doctoral Recipients from United States Universities, 1975 - 1989, National Research Council

TABLE 2-8 (continued)

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 - 1989

Year	Total*	Men*	Women*	%W	Am. Ind. Men	Am. Ind. Women	Asian Men	Asian Women	Black Men	Black Women	Hispanic Men	Hispanic Women	% Min	White Men	White Women
EDUCATION															
1975	6802	4654	2148	31.6	13	3	27	12	376	233	72	20	11.1	4029	1818
1976	7114	4756	2358	33.1	15	6	18	19	386	288	77	44	12.0	4129	1943
1977	6795	4385	2410	35.5	17	12	16	25	392	275	93	42	12.8	3741	1986
1978	6498	3850	2648	40.8	22	7	32	25	299	287	106	50	12.7	3212	2135
1979	6568	3738	2830	43.1	24	16	33	21	264	294	105	57	12.4	3143	2287
1980	6749	3641	3108	46.1	25	18	28	37	260	331	77	67	12.5	3126	2526
1981	6581	3341	3240	49.2	24	15	37	42	267	297	76	77	12.7	2834	2691
1982	6279	3092	3187	50.8	13	16	24	45	234	343	110	66	13.6	2666	2653
1983	6246	2944	3302	52.9	21	24	34	40	200	293	90	91	12.7	2549	2801
1984	5912	2761	3151	53.3	20	13	27	33	191	295	62	84	12.3	2412	2673
1985	5776	2632	3144	54.4	12	28	24	45	158	319	83	98	13.3	2321	2611
1986	5625	2418	3207	57.0	16	10	26	34	141	280	69	121	12.4	2127	2719
1987	5489	2358	3131	57.0	18	23	18	23	136	244	82	104	11.8	2070	2682
1988	5295	2234	3061	57.8	18	18	34	48	104	267	65	87	12.1	1986	2606
1989	5194	2108	3086	59.4	9	15	22	33	129	260	67	84	11.9	1860	2672
Total	92923	48912	44011	47.4	267	224	400	482	3537	4306	1234	1092	12.4	42205	36803
PROFESSIONAL AND OTHER FIELDS															
1975	1312	1091	221	17	0	1	13	3	24	18	9	1	5.3	1013	189
1976	1439	1130	309	21	4	2	8	2	35	23	19	7	6.9	1016	266
1977	1382	1068	314	23	2	0	12	2	25	24	20	3	6.4	960	264
1978	1404	1093	311	22	2	0	13	5	42	21	20	8	7.9	955	253
1979	1393	1023	370	27	3	1	7	7	40	24	11	2	6.8	897	317
1980	1344	952	392	29	0	1	18	6	36	27	12	3	7.7	836	342
1981	1300	884	416	32	2	1	10	7	28	39	9	11	8.2	783	342
1982	1389	912	477	34	1	1	18	5	36	37	13	5	8.4	828	423
1983	1344	899	445	33	1	0	19	9	25	37	11	11	8.4	818	375
1984	1436	903	533	37	4	0	19	4	28	29	21	13	8.2	803	470
1985	1361	855	506	37	4	2	15	8	33	42	12	17	9.8	778	428
1986	1409	848	561	40	4	5	22	9	26	37	17	7	9.0	768	497
1987	1463	876	587	40	5	3	12	5	29	30	15	10	7.5	802	533
1988	1422	873	548	39	4	2	20	9	27	53	13	6	9.4	796	474
1989	1482	871	611	41	4	3	23	9	24	30	15	10	8.0	794	555
Total	20880	14278	6601	32	40	22	229	90	458	471	217	114	7.9	12847	5728

*Includes individuals whose racial/ethnic group is not known.

SOURCE: Summary Reports: Doctoral Recipients from United States Universities, 1975 - 1989, National Research Council

TABLE 2-9
Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1989

Year	Total*	Men*	Women*	%W	Am. Ind. Men	Am. Ind. Women	Asian Men	Asian Women	Black Men	Black Women	Hispanic Men	Hispanic Women	% Min	White Men	White Women
TOTAL SCIENCE AND ENGINEERING															
1975	14475	11942	2533	17	11	3	165	36	190	71	121	16	4.2	10915	2325
1976	14342	11668	2674	19	10	0	203	51	178	94	110	12	4.6	10645	2446
1977	13889	11130	2759	20	21	8	198	48	202	103	132	30	5.3	10030	2480
1978	13609	10644	2965	22	19	2	225	61	195	109	136	44	5.8	9340	2584
1979	13851	10575	3276	24	22	5	242	73	184	131	132	48	6.0	9269	2852
1980	13734	10259	3475	25	20	8	244	85	147	134	128	46	5.9	9073	3070
1981	13956	10249	3707	27	22	9	249	87	161	137	141	58	6.2	9163	3298
1982	13700	9853	3847	28	28	12	225	107	167	134	166	68	6.6	8962	3445
1983	13785	9621	4164	30	24	5	243	112	152	142	141	99	6.7	8740	3724
1984	13717	9459	4258	31	27	5	279	122	163	153	174	83	7.3	8518	3821
1985	13372	9126	4246	32	22	20	263	117	157	136	153	101	7.2	8255	3792
1986	13315	8891	4424	33	32	25	289	120	126	141	178	103	7.6	8046	3973
1987	13295	8866	4429	33	32	23	331	128	121	134	179	132	8.1	7956	3947
1988	13762	9074	4688	34	29	16	342	123	146	139	204	127	8.2	8145	4227
1989	13777	8849	4928	36	33	22	371	127	140	156	180	130	8.4	7912	4435
Total	206579	150206	56373	27	352	163	3869	1397	2429	1914	2275	1097	6.5	134969	50419
NATURAL SCIENCE AND ENGINEERING															
1975	9294	8136	1158	12.5	5	1	139	26	84	24	74	7	3.87	7491	1067
1976	8977	7806	1171	13.0	3	0	167	39	74	37	63	4	4.31	7162	1061
1977	8707	7506	1201	13.8	15	1	160	31	79	38	81	14	4.81	6791	1082
1978	8490	7177	1313	15.5	14	1	194	40	98	35	74	16	5.56	6280	1149
1979	8777	7288	1489	17.0	10	0	201	50	89	38	69	25	5.49	6397	1295
1980	8742	7104	1638	18.7	12	3	201	49	64	37	63	18	5.11	6283	1458
1981	8781	7049	1732	19.7	15	4	204	56	73	47	77	19	5.64	6307	1540
1982	8899	6973	1926	21.6	15	5	189	76	65	43	88	31	5.75	6386	1727
1983	8738	6715	2023	23.2	15	2	207	84	69	40	61	42	5.95	6139	1816
1984	8934	6830	2104	23.6	19	3	238	96	77	45	95	34	6.79	6175	1882
1985	8792	6624	2168	24.7	14	10	229	89	78	41	91	42	6.76	6004	1945
1986	8736	6464	2272	26.0	20	17	249	91	56	47	102	48	7.21	5870	2040
1987	8891	6574	2317	26.1	24	9	292	92	68	51	113	52	7.88	5880	2079
1988	9416	6892	2524	26.8	22	11	301	79	67	57	146	51	7.80	6187	2298
1989	9582	6786	2796	29.2	25	12	329	98	76	57	130	56	8.17	6045	2541
Total	133756	105924	27832	20.8	228	79	3300	996	1117	637	1327	459	6.09	95397	24980

*Includes individuals whose racial/ethnic group is not known.

SOURCE: Women and Minorities in Science and Engineering, National Science Foundation, NSF 90-301, January 1990 and unpublished NSF and NRC data.

TABLE 2-10

SCIENCE AND ENGINEERING DOCTORATE RECIPIENTS BY FIELD AND SEX: 1979–89

	Total S/E		All Sciences		Physical Sciences		Math		Computer Sciences		Earth, Atmos Marine Sci		Life Sciences		Psychology		Social Sciences		Engineering	
Year	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
	TOTAL																			
1979	17,589	100	15,095	85.8	2,674	15.2	769	4.4	210	1.2	642	3.7	4,501	25.6	3,091	17.6	3,208	18.2	2,494	14.2
1980	17,524	100	15,045	85.9	2,521	14.4	744	4.2	218	1.2	628	3.6	4,715	26.9	3,098	17.7	3,121	17.8	2,479	14.1
1981	17,996	100	15,468	86.0	2,627	14.6	728	4.0	232	1.3	583	3.2	4,786	26.6	3,358	18.7	3,154	17.5	2,528	14.0
1982	18,017	100	15,371	85.3	2,694	15.0	720	4.0	220	1.2	657	3.6	4,844	26.9	3,159	17.5	3,077	17.1	2,646	14.7
1983	18,393	100	15,612	84.9	2,802	15.2	701	3.8	286	1.6	637	3.5	4,756	25.9	3,347	18.2	3,083	16.8	2,781	15.1
1984	18,514	100	15,601	84.3	2,845	15.4	698	3.8	295	1.6	614	3.3	4,877	26.3	3,257	17.6	3,015	16.3	2,913	15.7
1985	18,711	100	15,545	83.1	2,916	15.6	688	3.7	310	1.7	617	3.3	4,903	26.2	3,117	16.7	2,994	16.0	3,166	16.9
1986	19,251	100	15,875	82.5	3,090	16.1	729	3.8	399	2.1	589	3.1	4,805	25.0	3,124	16.2	3,139	16.3	3,376	17.5
1987	19,702	100	15,991	81.2	3,212	16.3	740	3.8	450	2.3	628	3.2	4,812	24.4	3,169	16.1	2,980	15.1	3,711	18.8
1988	20,738	100	16,549	79.8	3,318	16.0	749	3.6	515	2.5	728	3.5	5,123	24.7	3,064	14.8	3,052	14.7	4,189	20.2
1989	21,516	100	16,980	78.9	3,249	15.1	861	4.0	612	2.8	738	3.4	5,194	24.1	3,209	14.9	3,117	14.5	4,536	21.1
	MEN																			
1979	13,913	100	11,481	82.5	2,382	17.1	650	4.7	183	1.3	584	4.2	3,470	24.9	1,831	13.2	2,381	17.1	2,432	17.5
1980	13,640	100	11,251	82.5	2,199	16.1	649	4.8	197	1.4	564	4.1	3,565	26.1	1,787	13.1	2,290	16.8	2,389	17.5
1981	13,880	100	11,451	82.5	2,318	16.7	616	4.4	206	1.5	527	3.8	3,565	25.7	1,885	13.6	2,334	16.8	2,429	17.5
1982	13,747	100	11,225	81.7	2,337	17.0	624	4.5	200	1.5	554	4.0	3,552	25.8	1,721	12.5	2,237	16.3	2,522	18.3
1983	13,769	100	11,112	80.7	2,431	17.7	588	4.3	250	1.8	540	3.9	3,390	24.6	1,750	12.7	2,163	15.7	2,657	19.3
1984	13,810	100	11,048	80.0	2,446	17.7	583	4.2	258	1.9	508	3.7	3,529	25.6	1,626	11.8	2,098	15.2	2,762	20.0
1985	13,899	100	10,931	78.6	2,452	17.6	582	4.2	277	2.0	506	3.6	3,494	25.1	1,576	11.3	2,044	14.7	2,968	21.4
1986	14,167	100	11,016	77.8	2,585	18.2	608	4.3	351	2.5	489	3.5	3,353	23.7	1,526	10.8	2,104	14.9	3,151	22.2
1987	14,468	100	10,999	76.0	2,686	18.6	615	4.3	385	2.7	514	3.6	3,281	22.7	1,474	10.2	2,044	14.1	3,469	24.0
1988	15,162	100	11,259	74.3	2,761	18.2	628	4.1	459	3.0	583	3.8	3,434	22.6	1,388	9.2	2,006	13.2	3,903	25.7
1989	15,522	100	11,359	73.2	2,634	17.0	705	4.5	505	3.3	590	3.8	3,431	22.1	1,409	9.1	2,085	13.4	4,163	26.8
	WOMEN																			
1979	3,676	20.9	3,614	23.9	292	10.9	119	15.5	27	12.9	58	9.0	1,031	22.9	1,260	40.8	827	25.8	62	2.5
1980	3,884	22.2	3,794	25.2	322	12.8	95	12.8	21	9.6	64	10.2	1,150	24.4	1,311	42.3	831	26.6	90	3.6
1981	4,116	22.9	4,017	26.0	309	11.8	112	15.4	26	11.2	56	9.6	1,221	25.5	1,473	43.9	820	26.0	99	3.9
1982	4,270	23.7	4,146	27.0	357	13.3	96	13.3	20	9.1	103	15.7	1,292	26.7	1,438	45.5	840	27.3	124	4.7
1983	4,624	25.1	4,500	28.8	371	13.2	113	16.1	36	12.6	97	15.2	1,366	28.7	1,597	47.7	920	29.8	124	4.5
1984	4,704	25.4	4,553	29.2	399	14.0	115	16.5	37	12.5	106	17.3	1,348	27.6	1,631	50.1	917	30.4	151	5.2
1985	4,812	25.7	4,614	29.7	464	15.9	106	15.4	33	10.6	111	18.0	1,409	28.7	1,541	49.4	950	31.7	198	6.3
1986	5,084	26.4	4,859	30.6	505	16.3	121	16.6	48	12.0	100	17.0	1,452	30.2	1,598	51.2	1,035	33.0	225	6.7
1987	5,234	26.6	4,992	31.2	526	16.4	125	16.9	65	14.4	114	18.2	1,531	31.8	1,695	53.5	936	31.4	242	6.5
1988	5,576	26.9	5,290	32.0	557	16.8	121	16.2	56	10.9	145	19.9	1,689	33.0	1,676	54.7	1,046	34.3	286	6.8
1989	5,994	27.9	5,621	33.1	615	18.9	156	18.1	107	17.5	148	20.1	1,763	33.9	1,800	56.1	1,032	33.1	373	8.2

Note: Percentages for TOTAL and MEN are of Total All Fields. Percentages for WOMEN are of total in a field.

SOURCE: Early Release of Summary Statistics on Science and Engineering Doctorates, National Science Foundation, March 1990

TABLE 2-11
FOREIGN CITIZENS ON TEMPORARY VISAS EARNING PhDs IN THE U.S. BY FIELD, SEX AND RACE/ETHNICITY: 1978–89

Year	Total All Fields		All Sciences		Physical Sciences		Math		Computer Sciences		Earth, Atmo Marine Sci		Life Sciences		Psycholog		Social Sciences		Engineering	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL																				
1978	3,421	100	1,738	50.8	397	15.8	155	4.5	26	0.8	68	2.0	559	16.3	61	1.8	472	13.8	768	22.4
1979	3,587	100	1,842	51.4	415	15.9	149	4.2	32	0.9	71	2.0	562	15.7	73	2.0	540	15.1	815	22.7
1980	3,644	100	1,859	51.0	426	16.1	139	3.8	43	1.2	80	2.2	592	16.2	71	1.9	508	13.9	851	23.4
1981	3,940	100	2,020	51.3	442	15.3	186	4.7	40	1.0	85	2.2	613	15.6	80	2.0	574	14.6	942	23.9
1982	4,204	100	2,097	49.9	506	16.6	192	4.6	59	1.4	81	1.9	603	14.3	65	1.5	591	14.1	1,030	24.5
1983	4,499	100	2,230	49.6	539	16.2	209	4.6	72	1.6	106	2.4	629	14.0	79	1.8	596	13.2	1,170	26.0
1984	4,832	100	2,423	50.1	564	15.6	232	4.8	89	1.8	106	2.2	675	14.0	88	1.8	669	13.8	1,269	26.3
1985	5,229	100	2,609	49.9	620	15.7	238	4.6	89	1.7	119	2.3	779	14.9	81	1.5	683	13.1	1,419	27.1
1986	5,276	100	2,769	52.5	758	18.7	272	5.2	123	2.3	106	2.0	711	13.5	81	1.5	718	13.6	1,372	26.0
1987	5,610	100	2,918	52.0	798	18.3	302	5.4	143	2.5	125	2.2	781	13.9	85	1.5	684	12.2	1,532	27.3
1988	6,192	100	3,197	51.6	865	14.0	305	4.9	176	2.8	137	2.2	901	14.6	84	1.4	729	11.8	1,722	27.8
1989	6,590	100	3,520	53.4	999	15.2	343	5.2	179	2.7	121	1.8	954	14.5	103	1.6	821	12.5	1,924	29.2
MEN																				
1978	2,966	100	1,502	50.6	357	15.8	133	5.9	23	1.0	65	2.9	462	20.5	44	2.0	418	14.1	800	33.4
1979	3,092	100	1,538	49.7	375	16.1	130	5.6	32	1.4	66	2.8	472	20.2	43	1.8	466	15.1	798	34.2
1980	3,154	100	1,558	49.4	380	15.9	130	5.4	42	1.8	76	3.2	508	21.2	48	2.0	430	13.6	836	34.9
1981	3,387	100	1,661	49.0	392	15.2	162	6.3	38	1.5	78	3.0	512	19.9	48	1.9	497	14.7	913	35.5
1982	3,621	100	1,743	48.1	442	16.1	179	6.5	56	2.0	76	2.8	503	18.3	42	1.5	511	14.1	999	36.4
1983	3,872	100	1,851	47.8	480	16.0	185	6.2	66	2.2	99	3.3	520	17.4	48	1.6	516	13.3	1,144	38.2
1984	4,134	100	1,975	47.8	501	15.7	207	6.5	81	2.5	97	3.0	550	17.2	53	1.7	564	13.6	1,226	38.3
1985	4,395	100	2,103	47.8	525	15.1	216	6.2	81	2.3	106	3.1	608	17.5	53	1.5	575	13.1	1,363	39.3
1986	4,414	100	2,207	50.0	644	18.2	234	6.6	119	3.4	93	2.6	558	15.8	47	1.3	596	13.5	1,323	37.5
1987	4,722	100	2,337	49.5	703	18.4	260	6.8	138	3.6	112	2.9	581	15.2	48	1.3	569	12.0	1,478	38.7
1988	5,132	100	2,657	51.8	770	15.0	263	5.1	171	3.3	124	2.4	702	13.7	47	0.9	580	11.3	1,668	32.5
1989	5,399	100	2,921	54.1	872	16.2	301	5.6	171	3.2	108	2.0	733	13.6	67	1.2	669	12.4	1,854	34.3
WOMEN																				
1978	455	13.3	236	13.6	40	10.1	22	14.2	3	11.5	3	4.4	97	17.4	17	27.9	54	11.4	16	2.1
1979	495	13.8	253	13.7	40	9.6	19	12.8	0	0.0	5	7.0	90	16.0	30	41.1	74	13.7	17	2.1
1980	490	13.4	234	12.6	46	10.8	9	6.5	1	2.3	4	5.0	84	14.2	23	32.4	78	15.4	15	1.8
1981	553	14.0	289	14.3	50	11.3	24	12.9	2	5.0	7	8.2	101	16.5	32	40.0	77	13.4	29	3.1
1982	583	13.9	278	13.3	64	12.6	13	6.8	3	5.1	5	6.2	100	16.6	23	35.4	80	13.5	31	3.0
1983	627	13.9	307	13.8	59	10.9	24	11.5	6	8.3	7	6.6	109	17.3	31	39.2	80	13.4	26	2.2
1984	698	14.4	365	15.1	63	11.2	25	10.8	8	9.0	9	8.5	125	18.5	35	39.8	105	15.7	43	3.4
1985	834	15.9	438	16.8	95	15.3	22	9.2	8	9.0	13	10.9	171	22.0	28	34.6	108	15.8	56	3.9
1986	862	16.3	477	17.2	114	15.0	38	14.0	4	3.3	13	12.3	153	21.5	34	42.0	132	18.4	49	3.6
1987	888	15.8	495	17.0	95	11.9	42	13.9	5	3.5	13	10.4	199	25.5	37	43.5	116	17.0	54	3.5
1988	1,060	17.1	606	19.0	127	14.7	42	13.8	8	4.5	13	9.5	221	24.5	36	42.9	159	21.8	70	4.1
1989	1,191	18.1	599	17.0	127	12.7	42	12.2	8	4.5	13	10.7	221	23.2	36	35.0	152	18.5	70	3.6
WHITE																				
1978	1,372	20.8	641	36.9	113	28.5	68	43.9	9	34.6	36	52.9	164	29.3	38	82.3	134	16.3	318	41.4
1979	1,263	19.2	576	32.2	113	27.2	66	44.3	15	46.9	26	36.6	141	25.1	37	50.7	190	23.1	275	33.7
1980	1,331	20.2	608	33.9	115	27.0	58	41.7	23	53.5	31	38.8	182	30.7	50	70.4	175	21.3	284	33.4
1981	1,432	21.7	662	33.9	101	22.9	71	38.2	23	57.5	43	50.6	171	27.9	48	60.0	233	28.4	304	32.3
1982	1,458	22.1	670	33.2	132	26.1	84	43.8	26	44.1	31	38.3	185	30.7	42	64.6	186	22.7	328	31.8
1983	1,539	23.4	732	33.9	160	29.7	90	43.1	33	45.8	34	32.1	191	30.4	43	54.4	202	24.6	375	32.1
1984	1,495	22.7	702	30.0	125	22.2	88	37.9	30	33.7	39	36.8	189	28.0	49	55.7	206	25.1	347	27.3
1985	1,567	23.8	757	29.8	153	24.7	97	40.8	31	34.8	45	37.8	210	27.0	47	58.0	195	23.8	361	25.4
1986	1,506	22.9	772	28.8	170	22.4	101	37.1	39	31.7	42	39.6	188	26.4	42	51.9	209	25.5	348	25.4
1987	1,564	23.7	765	27.0	186	23.3	102	33.8	40	28.0	40	32.0	191	24.4	51	60.0	186	22.7	375	24.5
1988	1,681	25.5	856	24.3	183	18.3	107	31.2	44	24.6	41	33.9	220	23.1	37	35.9	224	27.3	411	21.4
1989	1,725	26.2	776	22.0	171	17.1	120	35.0	43	24.0	42	34.7	133	13.9	53	51.5	214	26.1	484	25.2

TABLE 2-11 (continued)

FOREIGN CITIZENS ON TEMPORARY VISAS EARNING PhDs IN THE U.S. BY FIELD, SEX AND RACE/ETHNICITY: 1978--89

Year	Total All Fields		All Sciences		Physical Sciences		Math		Computer Sciences		Earth, Atmo Marine Sci		Life Sciences		Psycholog		Social Sciences		Engineering	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
BLACK																				
1978	270	4.1	108	6.2	13	3.3	2	1.3	1	3.8	4	5.9	39	7.0	2	3.3	47	5.7	20	2.6
1979	320	4.9	127	7.1	14	3.4	1	0.7	1	3.1	3	4.2	53	9.4	5	6.8	59	7.2	34	4.2
1980	331	5.0	139	7.8	14	3.3	2	1.4	0	0.0	4	5.0	68	11.5	2	2.8	57	6.9	39	4.6
1981	372	5.6	164	8.4	12	2.7	9	4.8	1	2.5	8	9.4	79	12.9	3	3.8	62	7.6	39	4.1
1982	373	5.7	161	8.0	18	3.6	6	3.1	0	0.0	7	8.6	65	10.8	5	7.7	73	8.9	33	3.2
1983	383	5.5	162	7.5	16	3.0	2	1.0	1	1.4	11	10.4	61	9.7	1	1.3	81	9.9	38	3.2
1984	419	6.4	169	7.2	22	3.9	4	1.7	3	3.4	6	5.7	72	10.7	1	1.1	76	9.3	51	4.0
1985	395	6.0	169	6.7	19	3.1	4	1.7	0	0.0	2	1.7	73	9.4	3	3.7	82	10.0	38	2.7
1986	313	4.7	153	5.7	19	2.5	6	2.2	3	2.4	3	2.8	65	9.1	3	3.7	71	8.6	25	1.8
1987	305	4.6	134	4.7	17	2.1	7	2.3	1	0.7	1	0.8	45	5.8	4	4.7	74	9.0	31	2.0
1988	290	4.4	154	4.4	17	1.7	4	1.2	2	1.1	4	3.3	63	6.6	6	5.8	58	7.1	36	1.9
1989	272	4.1	146	4.1	13	1.3	5	1.5	3	1.7	3	2.5	56	5.9	4	3.9	62	7.6	23	1.2
ASIAN																				
1978	1,311	38.3	717	41.3	221	55.7	59	38.1	12	46.2	20	29.4	258	46.2	13	21.3	134	28.4	358	46.6
1979	1,463	40.8	778	43.4	239	57.6	56	38.9	12	37.5	26	36.6	238	42.3	14	19.2	212	39.3	408	50.1
1980	1,472	40.4	742	41.4	255	59.9	65	46.8	14	32.6	26	32.5	209	35.3	9	12.7	190	37.4	448	52.6
1981	1,564	39.7	792	40.6	276	62.4	81	43.5	12	30.0	21	24.7	221	36.1	15	18.8	189	32.9	493	52.3
1982	1,829	43.5	906	44.8	310	61.3	76	39.6	30	50.8	34	42.0	238	39.5	9	13.8	243	41.1	565	54.9
1983	2,006	44.6	968	44.9	306	56.8	88	42.1	31	43.1	44	41.5	256	40.7	28	35.4	246	41.3	628	53.7
1984	2,295	47.5	1,117	47.7	356	63.1	107	46.1	51	57.3	45	42.5	287	42.5	24	27.3	277	41.4	749	59.0
1985	2,526	48.3	1,224	48.2	369	59.5	107	45.0	49	55.1	57	47.9	343	44.0	19	23.5	301	44.1	851	60.0
1986	2,645	50.1	1,323	49.3	476	62.8	125	46.0	68	55.3	50	47.2	318	44.7	20	24.7	298	41.2	838	61.1
1987	2,933	52.3	1,461	51.6	505	63.3	131	43.4	86	60.1	57	45.6	376	48.5	15	17.6	321	46.9	958	62.5
1988	3,517	56.8	1,763	55.1	591	68.3	150	49.2	114	64.8	70	51.1	454	50.4	27	32.1	357	49.0	1,125	65.3
1989	3,877	58.8	1,970	56.0	641	64.2	184	53.6	120	67.0	57	47.1	494	51.8	35	34.0	439	53.5	1,154	60.0
HISPANIC																				
1978	289	8.4	176	10.1	33	8.3	20	12.9	1	3.8	6	8.8	65	11.6	3	4.9	48	10.2	45	5.9
1979	348	9.7	207	11.6	22	5.3	19	12.8	3	9.4	10	14.1	102	18.1	9	12.3	47	8.7	61	7.5
1980	328	9.0	209	11.7	21	4.9	11	7.9	3	7.0	16	20.0	104	17.6	6	8.5	50	9.8	49	5.8
1981	389	9.9	239	12.3	30	6.8	19	10.2	2	5.0	6	7.1	117	19.1	7	8.8	62	10.8	76	8.1
1982	294	7.0	170	8.4	24	4.7	17	8.9	3	5.1	8	9.0	82	13.6	3	4.6	37	6.3	52	5.0
1983	342	7.6	182	8.4	34	6.3	19	9.1	6	8.3	11	10.4	80	12.7	7	8.9	28	4.7	71	6.1
1984	300	6.2	196	8.4	35	6.2	27	11.6	2	2.2	11	10.4	67	9.9	12	13.6	48	7.2	46	3.8
1985	361	6.9	219	8.6	45	7.3	19	8.0	2	2.2	8	6.7	101	13.0	4	4.9	41	6.0	64	4.5
1986	372	7.1	224	8.3	48	6.3	26	9.6	5	4.1	2	1.9	78	11.0	11	13.6	60	8.4	60	4.4
1987	338	6.0	223	7.9	39	4.9	23	7.6	6	4.2	17	13.6	97	12.4	9	10.6	35	5.1	63	4.1
1988	348	5.6	230	7.2	34	3.9	24	7.9	5	2.8	12	8.8	108	12.0	5	6.0	42	5.8	61	3.5
1989	356	5.4	234	6.6	28	2.8	19	5.5	6	3.4	13	10.7	108	11.3	9	8.7	51	6.2	69	3.6

Note: Percentages for TOTAL and MEN are of Total All Fields. Percentages for all others are of total in a field.

TABLE 2-12

CITIZENSHIP AND VISA TYPE OF ASIAN PHD RECIPIENTS, 1977 – 1989

	TOTAL				MEN				WOMEN			
		Type of Visa				Type of Visa				Type of Visa		
YEAR	TOTAL	U.S.	Perm.	Temp.	Total	U.S.	Perm.	Temp.	Total	U.S.	Perm.	Temp.
1977	2,028	339	571	1,118	1,694	251	488	955	334	88	83	163
1978	2,343	390	642	1,311	1,932	287	531	1,114	411	103	111	197
1979	2,565	428	674	1,463	2,128	311	564	1,253	437	117	110	210
1980	2,574	458	644	1,472	2,108	313	513	1,282	466	145	131	190
1981	2,637	465	608	1,564	2,155	315	499	1,341	482	150	109	223
1982	2,833	452	552	1,829	2,292	281	444	1,567	541	171	108	262
1983	3,049	492	551	2,006	2,474	312	431	1,731	575	180	120	275
1984	3,314	512	507	2,295	2,709	338	389	1,982	605	174	118	313
1985	3,595	516	553	2,526	2,903	329	437	2,137	692	187	116	389
1986	3,703	530	528	2,645	3,022	347	417	2,258	681	183	111	387
1987	4,097	539	625	2,933	3,326	366	455	2,505	771	173	170	428
1988	4,753	613	623	3,517	3,827	413	458	2,956	926	200	165	561
1989	5,132	624	631	3,877	4,116	440	457	3,219	1,016	184	174	658
Percentages												
	TOTAL				MEN				WOMEN			
		Type of Visa				Type of Visa				Type of Visa		
YEAR	TOTAL	U.S.	Perm.	Temp.	Total	U.S.	Perm.	Temp.	Total	U.S.	Perm.	Temp.
1977	100.0	16.7	28.2	55.1	83.5	14.8	28.8	56.4	16.5	26.3	24.9	48.8
1978	100.0	16.6	27.4	56.0	82.5	14.9	27.5	57.7	17.5	25.1	27.0	47.9
1979	100.0	16.7	26.3	57.0	83.0	14.6	26.5	58.9	17.0	26.8	25.2	48.1
1980	100.0	17.8	25.0	57.2	81.9	14.8	24.3	60.8	18.1	31.1	28.1	40.8
1981	100.0	17.6	23.1	59.3	81.7	14.6	23.2	62.2	18.3	31.1	22.6	46.3
1982	100.0	16.0	19.5	64.6	80.9	12.3	19.4	68.4	19.1	31.6	20.0	48.4
1983	100.0	16.1	18.1	65.8	81.1	12.6	17.4	70.0	18.9	31.3	20.9	47.8
1984	100.0	15.4	15.3	69.3	81.7	12.5	14.4	73.2	18.3	28.8	19.5	51.7
1985	100.0	14.4	15.4	70.3	80.8	11.3	15.1	73.6	19.2	27.0	16.8	56.2
1986	100.0	14.3	14.3	71.4	81.6	11.5	13.8	74.7	18.4	26.9	16.3	56.8
1987	100.0	13.2	15.3	71.6	81.2	11.0	13.7	75.3	18.8	22.4	22.0	55.5
1988	100.0	12.9	13.1	74.0	80.5	10.8	12.0	77.2	19.5	21.6	17.8	60.6
1989	100.0	12.2	12.3	75.5	80.2	10.7	11.1	78.2	19.8	18.1	17.1	64.8

Note: Total percentages are of the grand TOTAL. Subset percentages are of the subset Total.

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 2-13

ASIAN DOCTORATES BY BROAD FIELD OF STUDY, 1975 – 1989

(U.S. Citizens and Non-U.S. Permanent Visa-Holders)

	Field of Doctorate													
Year	All Fields	Total S/E	% S/E	Eng	All Sci	Phys Sci	Earth, Atmos & Mar	Math	Comp Info Sci	Agri. Sci	Bio. Sci	Psych-ology	Soc Sci	Non-S/E
1975	1,025	807	78.7	274	533	171	19	62	-	46	141	21	73	218
1976	975	787	80.7	279	508	181	21	49	-	20	147	22	68	188
1977	910	738	81.1	249	489	160	21	42	0	21	140	33	72	172
1978	1,032	826	80.0	272	554	179	25	43	4	37	151	28	87	206
1979	1,102	865	78.5	306	559	168	21	46	9	23	165	36	91	237
1980	1,102	856	77.7	278	578	164	22	42	9	28	170	50	93	246
1981	1,073	814	75.9	285	529	149	14	40	16	25	156	41	88	259
1982	1,004	751	74.8	246	505	131	27	32	12	23	159	31	90	253
1983	1,043	771	73.9	247	524	136	26	34	20	33	164	44	67	272
1984	1,019	762	74.8	250	512	144	19	30	20	20	158	43	78	257
1985	1,069	799	74.7	281	518	150	21	33	17	24	151	44	78	270
1986	1,055	793	75.2	262	531	146	14	28	37	22	168	40	78	262
1987	1,167	921	78.9	327	594	143	18	41	26	38	170	47	111	246
1988	1,236	913	73.9	333	580	137	15	33	44	30	171	47	103	323
1989	1,255	976	77.8	358	618	154	23	24	52	23	198	55	89	279
Totals	16,067	12,379	77.0	4,247	8,132	2,313	308	579	266	413	2,407	582	1,266	3,688

Note: 'Computer Sciences' introduced in 1977, 'Information Sciences' added in 1983.

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 2-14
BLACK DOCTORATES BY BROAD FIELD OF STUDY, 1975 – 1989
(U.S. Citizens and Non-U.S. Permanent Visa-Holders)

	Field of Doctorate													
Year	All Fields	Total S/E	% S/E	Eng	All Sci	Phys Sci	Earth, Atmos & Mar	Math	Comp info Sci	Agri. Sci	Bio. Sci	Psych-ology	Soc Sci	Non-S/E
1975	1,057	270	25.5	16	254	34	1	11	-	5	49	78	76	787
1976	1,149	277	24.1	21	256	25	0	5	-	8	53	86	79	872
1977	1,194	303	25.4	15	288	32	2	10	0	15	36	95	98	891
1978	1,106	309	27.9	13	296	37	4	13	0	11	55	100	76	797
1979	1,114	309	27.7	20	289	37	3	11	1	9	35	115	78	805
1980	1,106	305	27.6	18	287	16	1	12	0	7	51	119	81	801
1981	1,110	316	28.5	19	297	24	4	9	2	11	50	113	84	794
1982	1,143	313	27.4	20	293	26	3	6	1	7	49	115	86	830
1983	1,005	305	30.3	29	276	25	1	3	3	12	46	112	74	700
1984	1,055	336	31.8	15	321	34	3	4	3	18	50	121	88	719
1985	1,043	331	31.7	34	297	27	4	7	3	16	53	105	82	712
1986	948	298	31.4	24	274	25	1	6	1	16	48	108	69	650
1987	906	308	34.0	25	264	20	2	11	2	13	60	93	82	598
1988	959	346	36.1	31	315	33	3	4	2	20	48	103	102	613
1989	946	339	35.8	32	307	31	4	8	1	14	52	95	102	607
Totals	15,841	4,665	29.4	332	4,314	426	36	120	19	182	735	1,558	1,257	11,176

Note: 'Computer Sciences' introduced in 1977, 'Information Sciences' added in 1983.

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 2-15
HISPANIC DOCTORATES BY BROAD FIELD OF STUDY, 1975 – 1989
(U.S. Citizens and Non-U.S. Permanent Visa-Holders)

	Field of Doctorate													
Year	All Fields	Total S/E	% S/E	Eng	All Sci	Phys Sci	Earth, Atmos & Mar	Math	Comp info Sci	Agri. Sci	Bio. Sci	Psych-ology	Soc Sci	Non-S/E
1975	337	143	42.4	17	126	19	4	8	-	4	32	32	27	194
1976	363	126	34.7	16	110	17	0	9	-	4	25	27	28	237
1977	474	186	39.2	22	164	33	12	10	0	4	25	40	40	288
1978	538	199	37.0	32	167	20	5	5	0	9	30	51	47	339
1979	539	220	40.8	24	196	33	6	10	2	6	38	49	52	319
1980	485	207	42.7	27	180	27	4	5	1	5	31	54	53	278
1981	526	230	43.7	16	214	30	6	5	0	15	41	66	51	296
1982	614	261	42.5	36	225	25	7	6	1	7	47	74	58	353
1983	607	262	43.2	29	233	26	11	7	0	6	43	93	47	345
1984	607	290	47.8	34	256	47	2	11	3	8	44	84	57	317
1985	634	280	44.2	22	258	30	6	12	6	12	59	69	64	354
1986	678	326	48.1	35	291	40	5	12	7	17	66	88	56	352
1987	709	354	49.9	34	320	56	5	11	4	15	62	95	72	355
1988	695	394	56.7	63	331	63	8	4	2	21	76	93	64	301
1989	680	372	54.7	47	325	59	9	11	4	18	72	88	64	308
Totals	8,486	3,850	45.4	454	3,396	525	90	126	30	151	691	1,003	780	4,636

Note: 'Computer Sciences' introduced in 1977, 'Information Sciences' added in 1983.

SOURCE: ***Summary Report 1989 Doctorate Recipients from U.S. Universities,*** National Research Council

TABLE 2-16
CITIZENSHIP STATUS OF DOCTORATE RECIPIENTS BY BROAD FIELD FOR SELECTED YEARS, 1960–1989

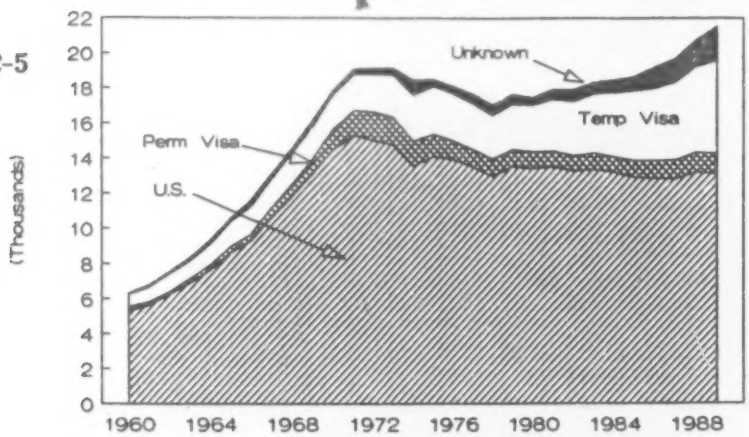
Field/ Citizenship	1960	1965	1969	1973*	1977	1981	1985	1989
Total All Fields† (No.)	9,733	16,340	25,743	33,755	31,716	31,357	31,297	34,319
U.S. Citizens	87.8	85.6	85.8	84.4	84.4	82.8	78.1	73.9
Non-U.S. Citizens	12.2	14.4	14.2	15.6	15.6	17.2	21.9	26.1
Physical Sciences§ (No.)	2,152	3,550	5,005	5,311	4,379	4,170	4,531	5,460
U.S. Citizens	86.7	84.9	84.1	78.6	78.0	75.9	70.1	64.2
Non-U.S. Citizens	13.3	15.1	15.9	21.4	22.0	24.1	29.9	35.8
Engineering (No.)	794	2,074	3,265	3,364	2,643	2,528	3,166	4,536
U.S. Citizens	76.8	77.5	74.7	64.5	57.3	48.5	42.4	44.8
Non-U.S. Citizens	23.2	22.5	25.3	35.5	42.7	51.5	57.6	55.2
Life Sciences (No.)	1,729	2,684	4,204	5,167	4,920	5,611	5,779	6,343
U.S. Citizens	81.9	77.2	80.3	80.0	81.0	82.9	80.0	76.3
Non-U.S. Citizens	18.1	22.8	19.7	20.0	19.0	17.1	20.0	23.7
Social Sciences (No.)	1,668	2,327	3,984	5,758	6,073	6,142	5,765	5,955
U.S. Citizens	88.0	86.3	87.5	86.6	87.6	87.6	83.9	80.2
Non-U.S. Citizens	12.0	13.7	12.5	13.4	12.4	12.4	16.1	19.8
Humanities (No.)	1,600	2,530	3,788	5,414	4,562	3,751	3,429	3,558
U.S. Citizens	94.0	92.3	91.7	90.9	91.5	89.3	87.4	83.2
Non-U.S. Citizens	6.0	7.7	8.3	9.1	8.5	10.7	12.6	16.8
Education (No.)	1,549	2,736	4,659	7,238	7,455	7,497	6,733	6,265
U.S. Citizens	94.8	94.6	94.2	94.5	93.3	90.8	89.2	89.6
Non-U.S. Citizens	5.2	5.4	5.8	5.5	6.7	9.2	10.8	10.4
Professional/Other (No.)	241	439	838	1,503	1,684	1,658	1,894	2,202
U.S. Citizens	89.0	83.4	85.8	83.8	83.9	82.2	76.7	73.9
Non-U.S. Citizens	11.0	16.6	14.2	16.2	16.1	17.8	23.3	26.1

NOTE: Totals in each field include doctorates with unknown citizenship status. Percentages are based on the number who reported citizenship status. See Technical Notes in Appendix C for rates of nonresponse to this question.

*Prior to 1989, 1973 was the peak year for doctorates earned in the United States.
†See Table 14 in the special section of this report for numbers of U.S. citizens, permanent residents, and temporary residents.
§Includes mathematics and computer sciences.

SCIENCE & ENGINEERING PhDs BY CITIZENSHIP & VISA TYPE, 1960–89

CHART 2-5



Source: NRC/NSF

Graph by CPST

SOURCE: *Summary Report 1989 Doctorate Recipients from U.S. Universities,* National Research Council

TABLE 1-17

NON-CITIZENS AS A PROPORTION OF ALL PHD RECIPIENTS BY FIELD SELECTED YEARS, 1960-1989

Field	1960	1965	1969	1973	1977	1981	1985	1989
TOTAL ALL FIELDS (No.)	9,733	16,340	25,743	33,755	31,716	31,357	31,297	34,319
Permanent Visas	2.9	3.5	4.9	6.0	4.4	4.2	4.4	5.1
Temporary Visas	9.3	10.9	9.3	9.6	11.1	13.0	17.5	21.0
PHYSICAL SCIENCES (No.)	2,152	3,550	5,005	5,311	4,379	4,170	4,531	5,460
Permanent Visas	2.9	3.6	5.2	8.3	6.3	5.6	5.4	5.3
Temporary Visas	10.4	11.5	10.8	13.1	15.8	18.6	24.5	30.5
Physics/Astronomy (No.)	530	1,046	1,461	1,589	1,150	1,015	1,080	1,278
Permanent Visas	3.2	4.1	4.7	8.1	7.6	5.4	4.6	5.3
Temporary Visas	9.2	12.5	11.1	15.9	18.4	20.8	28.0	36.7
Chemistry	1,078	1,444	1,967	1,855	1,571	1,612	1,836	1,971
Permanent Visas (No.)	2.2	3.0	5.3	9.7	6.8	6.0	4.9	4.6
Temporary Visas	8.9	10.6	9.2	10.4	12.9	15.2	18.7	25.1
Earth, Atmos., and Marine (No.)	253	375	507	634	694	583	617	738
Permanent Visas	4.0	5.6	6.0	7.8	3.2	2.8	5.4	4.4
Temporary Visas	13.9	12.4	15.7	11.6	14.7	14.8	20.1	17.8
Mathematics (No.)	291	685	1,070	1,232	933	728	688	861
Permanent Visas	3.8	2.8	4.9	6.7	5.9	6.0	6.4	4.5
Temporary Visas	15.3	11.3	10.8	14.4	18.3	26.2	36.3	44.5
Computer Sciences* (No.)	N/A	N/A	N/A	N/A	N/A	232	310	612
Permanent Visas	N/A	N/A	N/A	N/A	N/A	8.8	7.9	9.9
Temporary Visas	N/A	N/A	N/A	N/A	N/A	17.5	29.5	31.2
ENGINEERING (No.)	794	2,074	3,265	3,364	2,643	2,528	3,166	4,536
Permanent Visas	6.8	6.8	10.9	16.8	12.7	12.5	10.5	8.7
Temporary Visas	16.3	15.7	14.4	18.7	30.1	39.0	47.1	46.5
LIFE SCIENCES (No.)	1,729	2,684	4,204	5,167	4,920	5,611	5,779	6,343
Permanent Visas	3.3	3.6	4.8	7.2	5.0	3.8	3.4	4.4
Temporary Visas	14.8	19.2	14.9	12.8	13.9	13.4	16.6	19.3
Biological Sciences (No.)	1,246	1,963	3,092	3,648	3,484	3,804	3,792	4,106
Permanent Visas	3.2	3.4	4.6	6.8	4.8	3.3	2.9	4.6
Temporary Visas	12.0	15.8	11.1	8.8	9.4	7.8	11.5	15.5
Health Sciences (No.)	69	145	297	486	511	657	729	985
Permanent Visas	0.0	6.3	5.9	6.7	9.4	5.5	5.1	2.8
Temporary Visas	23.2	22.4	17.0	9.2	8.2	8.6	14.5	15.2
Agricultural Sciences (No.)	414	576	815	1,033	925	1,150	1,258	1,252
Permanent Visas	3.9	3.5	5.2	8.9	3.6	4.2	3.9	4.8
Temporary Visas	22.0	30.2	28.1	28.3	34.1	34.7	33.1	35.6
SOCIAL SCIENCES† (No.)	1,668	2,327	3,984	5,758	6,073	6,142	5,765	5,955
Permanent Visas	3.0	3.6	4.1	4.2	3.2	3.3	3.8	4.2
Temporary Visas	9.0	10.1	8.4	9.2	9.2	9.1	12.2	15.5
Political Sci./Int'l Relations (No.)	238	391	558	908	710	532	484	524
Permanent Visas	2.6	4.7	6.3	4.2	5.2	5.7	5.4	9.3
Temporary Visas	12.6	15.0	9.1	10.6	11.8	13.5	20.7	25.2
Economics (No.)	352	560	708	943	840	825	812	898
Permanent Visas	6.3	5.7	7.0	8.5	5.5	7.6	7.7	6.8
Temporary Visas	19.0	20.4	16.9	20.9	25.8	25.9	35.9	40.8
HUMANITIES (No.)	1,600	2,530	3,788	5,414	4,562	3,751	3,429	3,558
Permanent Visas	3.0	3.0	4.5	4.4	3.6	4.2	4.6	6.4
Temporary Visas	3.0	4.7	3.8	4.7	4.9	6.5	8.1	10.5
EDUCATION (No.)	1,549	2,736	4,659	7,238	7,455	7,497	6,733	6,265
Permanent Visas	0.5	1.0	1.5	1.5	1.5	1.8	2.0	2.8
Temporary Visas	4.7	4.5	4.2	4.1	5.2	7.4	8.8	7.6
PROFESSIONAL/OTHER† (No.)	241	439	838	1,503	1,684	1,658	1,894	2,202
Permanent Visas	0.8	4.4	4.9	4.8	4.6	4.8	5.4	6.3
Temporary Visas	10.1	12.1	9.3	11.3	11.5	13.0	17.9	19.8
Business and Management (No.)	140	287	516	785	671	624	790	1,071
Permanent Visas	0.7	4.6	5.8	5.1	6.1	8.3	8.7	6.9
Temporary Visas	5.8	10.6	8.1	13.0	15.8	15.6	22.6	26.5

NOTE: Totals in each field include U.S. citizens and recipients with unknown citizenship status. Percentages are based on the number of doctorates with known citizenship status. See Technical Notes in Appendix C for rates of nonresponse to this question.

*Computer Sciences was not available prior to 1979.
†Totals include other fields not shown.

SOURCE: ***Summary Report 1989 Doctorate Recipients from U.S. Universities,*** National Research Council

TABLE 2-18

POSTGRADUATION COMMITMENTS OF DOCTORATE RECIPIENTS BY DEMOGRAPHIC GROUP AND BROAD FIELD, 1973, 1979, 1989

	Employment			Study		
	1973*	1979	1989	1973*	1979	1989
Total Ph.D.s	20,063	16,985	16,650	3,868	4,215	5,801
	83.8	80.1	74.2	16.2	19.9	25.8
Men	83.6	79.2	71.8	16.4	20.8	28.2
Women	85.1	82.6	78.4	14.9	17.4	21.6
U.S. Citizens	85.4	80.7	76.6	14.6	19.3	23.4
Permanent Residents	68.1	77.7	72.8	31.9	22.3	27.2
Temporary Residents	76.4	76.5	64.3	23.6	23.5	35.7
U.S. Citizens & Perm. Residents†						
American Indians	84.6	86.8	81.5	15.4	13.2	18.5
Asians	61.4	73.7	66.6	38.6	26.3	33.4
Blacks	91.0	93.8	89.0	9.0	6.2	11.0
Hispanics	84.4	87.0	74.3	15.6	13.0	25.7
Whites	84.9	80.2	76.5	15.1	19.8	23.5
Physical Sciences§	60.9	63.0	52.6	39.1	37.0	47.4
Engineering	87.1	87.8	80.0	12.9	12.2	20.0
Life Sciences	58.1	45.8	41.5	41.9	54.2	58.5
Social Sciences	91.9	87.7	84.1	8.1	12.3	15.9
Humanities	96.2	94.4	94.3	3.8	5.6	5.7
Education	98.0	97.4	96.7	2.0	2.6	3.3
Professional/Other	98.6	97.5	97.2	1.4	2.5	2.8

NOTE: Only doctorates with definite commitments are included. Percentages are based on the number of Ph.D.s with known postgraduation plans. See Technical Notes in Appendix C for rates of nonresponse to the applicable questions and for further explanation of postgraduation plans.

*Prior to 1989, 1973 was the peak year for doctorates earned in the United States.
†Race/ethnicity is shown only for U.S. citizens and permanent residents because these recipients are the most likely to be long-term members of the U.S. labor force.
§Includes mathematics and computer sciences.

SOURCE: ***Summary Report 1989 Doctorate Recipients from U.S. Universities,*** National Research Council

TABLE 2-19

POSTDOCTORAL LOCATION OF NON-CITIZEN DOCTORATE RECIPIENTS BY VISA STATUS AND BROAD FIELD, 1973, 1979, 1989

	U.S. Employment			U.S. Study			Foreign Employment			Foreign Study		
Field	1973	1979	1989	1973	1979	1989	1973	1979	1989	1973	1979	1989
PERMANENT RESIDENTS												
Total All Fields (No.)	642	539	508	314	160	212	95	48	99	20	9	21
	59.9	71.3	60.5	29.3	21.2	25.2	8.9	6.3	11.8	1.9	1.2	2.5
Physical Sciences	37.7	60.3	47.5	52.1	35.1	43.0	5.6	3.3	5.1	4.7	1.3	4.4
Physics/Astronomy	26.9	54.1	15.0	58.2	37.8	72.5	6.0	5.4	2.5	9.0	2.7	10.0
Chemistry	31.0	43.9	34.0	65.5	54.4	60.0	1.2	0.0	4.0	2.4	1.8	2.0
Earth, Atmos., and Marine	47.1	72.2	50.0	41.2	22.2	37.5	11.8	5.6	6.3	0.0	0.0	6.3
Mathematics	70.0	78.6	70.0	13.3	14.3	15.0	10.0	7.1	10.0	6.7	0.0	5.0
Computer Sciences*	N/A	100.0	93.8	N/A	0.0	0.0	N/A	0.0	6.3	N/A	0.0	0.0
Engineering	70.4	88.5	76.5	20.0	8.3	15.9	8.9	2.8	7.6	0.7	0.5	0.0
Life Sciences	30.2	31.3	21.3	58.0	60.9	60.6	8.5	5.2	12.9	3.3	2.6	5.2
Biological Sciences	26.3	17.9	17.8	65.4	75.0	71.2	4.5	3.6	5.9	3.8	3.6	5.1
Health Sciences	50.0	75.0	70.0	43.8	25.0	10.0	6.3	0.0	20.0	0.0	0.0	0.0
Agricultural Sciences	37.5	60.0	18.5	35.0	20.0	33.3	25.0	20.0	40.7	2.5	0.0	7.4
Social Sciences†	81.9	78.9	72.3	6.9	10.1	10.7	11.1	9.2	17.0	0.0	1.8	0.0
Economics	84.0	84.6	80.6	4.0	7.7	3.2	12.0	7.7	16.1	0.0	0.0	0.0
Political Sci./Int'l Relations	81.8	71.4	75.0	4.5	0.0	0.0	13.6	28.6	25.0	0.0	0.0	0.0
Humanities	87.9	80.0	78.8	4.0	7.1	4.8	7.3	12.9	15.4	0.8	0.0	1.0
Education	64.6	82.2	66.1	10.4	2.2	6.5	25.0	13.3	22.6	0.0	2.2	4.8
Professional/Other†	87.5	83.7	83.5	6.3	4.1	2.5	6.3	12.2	11.4	0.0	0.0	2.5
Business and Management	89.3	93.5	88.2	3.6	0.0	3.9	7.1	6.5	7.8	0.0	0.0	0.0
TEMPORARY RESIDENTS												
Total All Fields (No.)	317	470	1,029	311	400	1,137	1,250	1,257	1,371	167	124	217
	15.5	20.9	27.4	15.2	17.8	30.3	61.1	55.8	36.5	8.2	5.5	5.8
Physical Sciences	11.9	19.2	23.6	31.8	41.3	52.9	36.6	30.4	15.6	19.7	9.1	7.9
Physics/Astronomy	6.1	10.7	10.0	37.1	50.3	70.1	21.2	24.8	6.9	35.6	14.1	13.0
Chemistry	6.7	8.5	8.5	48.3	62.0	77.1	30.8	23.2	8.5	14.2	6.3	5.8
Earth, Atmos., and Marine	7.3	13.3	14.7	22.0	17.8	36.8	65.9	57.8	41.2	4.9	11.1	7.4
Mathematics	26.6	44.4	41.3	11.0	9.9	26.5	50.5	39.5	24.5	11.9	6.2	7.7
Computer Sciences*	N/A	66.7	70.6	N/A	9.5	3.7	N/A	23.8	23.9	N/A	0.0	1.8
Engineering	20.7	42.0	38.5	17.7	18.8	26.3	54.5	36.3	32.0	7.2	2.9	3.2
Life Sciences	5.0	4.4	7.7	20.3	23.6	44.5	64.8	66.1	39.5	9.9	6.0	8.3
Biological Sciences	5.6	3.6	5.2	30.6	42.1	62.2	49.1	46.7	24.8	14.8	7.6	7.9
Health Sciences	6.5	5.6	21.2	25.8	16.7	22.4	67.7	69.4	49.4	0.0	8.3	7.1
Agricultural Sciences	4.1	4.9	7.1	8.2	6.9	22.5	81.6	84.2	60.8	6.1	3.9	9.6
Social Sciences†	22.8	23.9	34.1	5.3	3.7	9.0	69.2	65.6	52.4	2.8	6.7	4.5
Economics	25.5	29.7	40.3	5.5	3.6	7.9	65.5	62.3	50.0	3.4	4.3	1.9
Political Sci./Int'l Relations	14.0	24.4	30.6	5.3	4.9	2.0	78.9	58.5	59.2	1.8	12.2	8.2
Humanities	25.3	15.8	34.4	4.0	2.5	1.5	68.4	76.7	56.4	2.3	5.0	7.7
Education	8.8	6.3	13.5	3.4	2.6	2.9	84.9	87.0	77.4	2.9	4.1	6.3
Professional/Other†	26.8	27.3	49.6	0.8	1.2	3.3	72.4	68.6	45.9	0.0	2.9	1.2
Business and Management	32.2	38.4	64.1	1.1	2.0	3.6	66.7	56.6	31.1	0.0	3.0	1.2

NOTE: Only doctorates with definite commitments are included. Percentages are based on the number of Ph.D.s with known postgraduation plans and location in each field. See Technical Notes in Appendix C for rates of nonresponse to these questions and for further explanation of postgraduation plans.

SOURCE: *Summary Report 1989 Doctorate Recipients from U.S. Universities,* National Research Council

TABLE 2-20

EMPLOYMENT SECTOR OF NON-U.S. CITIZEN PHD RECIPIENTS WITH POSTGRADUATION COMMITMENTS IN THE U.S. BY VISA STATUS AND FIELD, 1973, 1979, 1989

Field		Academe			Industry/Self-Employment			Government			Other		
		1973	1979	1989	1973	1979	1989	1973	1979	1989	1973	1979	1989
PERMANENT RESIDENTS													
Total All Fields	(No.)	369	230	302	207	249	164	26	25	10	39	33	31
	(%)	57.6	42.8	59.6	32.3	46.4	32.3	4.1	4.7	2.0	6.1	6.1	6.1
Physical Sciences*	(No.)	32	27	39	33	59	34	12	3	0	3	2	2
	(%)	40.0	29.7	52.0	41.3	64.8	45.3	15.0	3.3	0.0	3.8	2.2	2.7
Engineering	(No.)	40	22	28	144	153	96	6	11	4	7	5	2
	(%)	20.3	11.5	21.5	73.1	80.1	73.8	3.0	5.8	3.1	3.6	2.6	1.5
Life Sciences	(No.)	30	17	19	21	13	12	2	1	1	11	4	0
	(%)	46.9	48.6	59.4	32.8	37.1	37.5	3.1	2.9	3.1	17.2	11.4	0.0
Social Sciences	(No.)	100	56	55	4	17	11	3	5	3	11	8	12
	(%)	84.7	65.1	67.9	3.4	19.8	13.6	2.5	5.8	3.7	9.3	9.3	14.8
Humanities	(No.)	105	48	77	1	3	2	0	0	1	3	5	2
	(%)	96.3	85.7	93.9	0.9	5.4	2.4	0.0	0.0	1.2	2.8	8.9	2.4
Education	(No.)	26	23	27	0	3	4	2	3	1	3	8	9
	(%)	83.9	62.2	65.9	0.0	8.1	9.8	6.5	8.1	2.4	9.7	21.6	22.0
Professional/Other	(No.)	36	37	57	4	1	5	1	2	0	1	1	4
	(%)	85.7	90.2	86.4	9.5	2.4	7.6	2.4	4.9	0.0	2.4	2.4	6.1
TEMPORARY RESIDENTS													
Total All Fields	(No.)	210	256	646	71	157	321	6	17	23	29	39	36
	(%)	66.5	54.6	63.0	22.5	33.5	31.3	1.9	3.6	2.2	9.2	8.3	3.5
Physical Sciences*	(No.)	35	56	153	12	22	57	1	4	7	0	2	2
	(%)	72.9	66.7	69.9	25.0	26.2	26.0	2.1	4.8	3.2	0.0	2.4	0.9
Engineering	(No.)	19	73	147	47	115	223	2	9	11	3	9	5
	(%)	27.5	35.4	38.1	68.1	55.8	57.8	2.9	4.4	2.8	1.4	4.4	1.3
Life Sciences	(No.)	12	8	31	6	6	18	2	1	3	2	4	3
	(%)	54.5	42.1	56.4	27.3	31.6	32.7	9.1	5.3	5.5	9.1	21.1	5.5
Social Sciences	(No.)	62	51	121	3	7	8	0	1	2	16	19	20
	(%)	76.5	65.4	80.1	3.7	9.0	5.3	0.0	1.3	1.3	19.8	24.4	13.2
Humanities	(No.)	41	18	62	0	1	2	1	0	0	2	0	2
	(%)	93.2	94.7	93.9	0.0	5.3	3.0	2.3	0.0	0.0	4.5	0.0	3.0
Education	(No.)	13	10	19	0	1	5	0	2	0	5	3	4
	(%)	72.2	62.5	67.9	0.0	6.3	17.9	0.0	12.5	0.0	27.8	18.8	14.3
Professional/Other	(No.)	28	40	113	3	5	8	0	0	0	3	2	0
	(%)	82.4	85.1	93.4	8.8	10.6	6.6	0.0	0.0	0.0	8.8	4.3	0.0

NOTE: Only doctorates with definite commitments for employment in the United States are included; see Table 20 for percentages of permanent and temporary residents who meet these criteria. Percentages in Table 21 are based on the number of Ph.D.s with known employment sector in each field. See Technical Notes in Appendix C for rates of nonresponse to this question.

*Includes mathematics and computer sciences.

SOURCE: *Summary Report 1989 Doctorate Recipients from U.S. Universities,* National Research Council

TABLE 2-21

PRIMARY WORK ACTIVITY OF PHD RECIPIENTS WITH POSTGRADUATION COMMITMENTS IN THE U.S., BY SECTOR AND BROAD FIELD, 1973, 1979, 1989 (U.S. Citizens and Permenent Residents)

	R&D			Teaching			Administration			Prof. Services			Other		
	1973*	1979	1989	1973*	1979	1989	1973*	1979	1989	1973*	1979	1989	1973*	1979	1989
Total Ph.D.s (No.)	3,658	3,593	3,623	9,461	6,044	4,916	2,084	2,054	1,958	1,589	1,651	1,951	307	467	460
	21.4	26.0	28.1	55.3	43.8	38.1	12.2	14.9	15.2	9.3	12.0	15.1	1.8	3.4	3.6
Academe	8.3	12.9	19.2	81.4	72.9	65.7	6.6	9.1	9.1	3.0	3.8	4.8	0.6	1.2	1.3
Industry/Self-Empl.	72.3	69.3	60.0	1.5	1.1	1.6	4.5	4.9	4.6	16.2	17.0	26.3	5.5	7.7	7.4
Government	49.7	42.1	41.3	4.1	3.3	3.7	19.9	25.4	25.3	21.9	23.2	24.1	4.4	6.0	5.6
Other	16.1	11.7	9.2	17.4	21.1	19.3	40.7	37.6	40.1	23.6	25.4	26.8	2.1	4.2	4.6
Physical Sci.†	48.0	67.0	64.5	43.1	24.3	25.2	2.7	2.5	2.5	4.0	3.4	4.7	2.1	2.8	3.1
Engineering	67.5	72.3	72.7	19.1	16.9	15.7	3.9	2.2	2.3	6.5	4.5	6.4	3.0	4.1	2.9
Life Sciences	38.0	46.3	44.2	44.5	33.3	29.0	4.2	5.6	7.5	9.6	9.6	14.6	3.7	5.3	4.8
Social Sciences	16.7	22.3	24.0	58.6	42.5	29.0	5.3	5.6	6.1	18.1	27.3	38.2	1.3	2.4	2.7
Humanities	2.8	5.0	7.1	90.6	78.9	76.1	3.2	6.6	5.1	2.0	3.9	5.9	1.4	5.7	5.8
Education	6.4	6.5	5.8	47.9	42.4	37.8	33.2	36.9	40.9	11.3	11.9	12.5	1.2	2.3	3.0
Professional/Other	8.4	11.3	22.6	73.2	63.2	54.5	10.1	13.1	9.1	6.8	8.1	10.2	1.5	4.4	3.6

NOTE: Only doctorates with definite commitments for employment are included. Foreign locations are excluded. Percentages are based on the number of Ph.D.s with known employment sector and work activity. See Technical Notes in Appendix C for rates of nonresponse to these questions.

*Prior to 1989, 1973 was the peak year for doctorates earned in the United States.
†Includes mathematics and computer sciences.

TABLE 2-22

MEDIAN YEARS TO DEGREE FOR DOCTORATE RECIPIENTS BY DEMOGRAPHIC GROUP AND BROAD FIELD, 1989

	All Fields	Physical Sci.*	Engineering	Life Sci.	Social Sci.	Humanities	Education	Prof./Other
RTD Years								
All Ph.D.s	6.9	6.1	6.0	6.6	7.4	8.4	8.2	7.5
Men	6.7	6.2	6.0	6.5	7.4	8.2	8.0	7.4
Women	7.4	6.1	5.8	6.6	7.4	8.7	8.2	7.6
U.S. Citizens	7.2	6.1	6.0	6.6	7.5	8.6	8.4	7.7
Permanent Res.	7.1	6.8	6.6	6.7	8.1	8.0	6.9	8.2
Temporary Res.	6.2	6.2	5.9	6.3	6.7	7.6	6.0	6.6
U.S. Citizens								
American Indians	7.5	†	†	†	†	†	7.8	†
Asians	6.8	6.0	6.4	6.5	7.3	10.2	8.3	8.1
Blacks	8.3	7.6	7.2	6.8	8.2	8.8	8.6	8.4
Hispanics	7.4	6.5	5.8	6.3	8.2	8.2	8.6	7.8
Whites	7.2	6.1	5.9	6.6	7.5	8.6	8.4	7.6
TTD Years								
All Ph.D.s	10.5	7.3	8.1	9.1	10.3	12.5	17.3	13.2
Men	9.6	7.4	8.2	8.9	10.1	12.1	16.7	12.6
Women	12.5	7.3	7.2	9.6	10.7	13.0	17.8	14.3
U.S. Citizens	11.1	7.1	7.6	9.0	10.4	12.7	17.8	14.3
Permanent Res.	10.0	8.4	8.8	9.6	11.4	11.5	12.7	12.4
Temporary Res.	9.2	7.8	8.4	9.7	9.7	11.4	12.7	11.1
U.S. Citizens								
American Indians	13.1	†	†	†	†	†	15.5	†
Asians	9.2	6.9	8.5	8.0	9.5	13.9	19.5	12.3
Blacks	15.5	8.9	8.8	9.7	10.6	13.9	18.0	18.1
Hispanics	11.7	7.8	9.3	8.4	11.7	12.5	17.1	14.0
Whites	11.1	7.0	7.4	9.0	10.4	12.6	17.8	14.2

SOURCE: Summary Reports: Doctorate Recipients from Unites States Universities, 1984 - 1989, National Research Council.

TABLE 2-23
SOURCES OF SUPPORT DURING GRADUATE FOR DOCTORATE RECIPIENTS BY SEX, SELECTED YEARS, 1974 - 1989

SOURCE OF SUPPORT	1974				1978				1987				1988				1989			
	MEN	%	WOM	%	MEN	%	WOM	%	MEN	%	WOM	%	MEN	%	WOM	%	MEN	%	WOM	%
FEDERAL SUPPORT																				
NSF Research Asst									1,183	6.3	238	2.3	1,478	7.5	335	3.1	1,408	7.3	319	2.8
NIH Research Asst									517	2.7	287	2.7	778	4.0	397	3.7	729	3.8	443	3.9
Other Fed Res Asst									752	4.0	208	2.0	921	4.7	276	2.6	1,099	5.7	340	3.0
NSF Fellowship	1,805	5.3	206	3.5	586	2.7	139	1.8	312	1.7	144	1.4	261	1.3	120	1.1	290	1.5	149	1.3
NIH Traineeship	1,233	5.0	441	7.5	1,068	5.0	473	6.1	722	3.8	630	6.0	690	3.5	664	6.2	646	3.3	642	5.7
GI Bill	3,263	13.2	22	0.4	2,657	12.5	50	0.6	638	3.4	65	0.6	519	2.7	56	0.5	441	2.3	82	0.7
Other Fed Support*	7,648	30.9	1,892	32.1	5,041	23.6	1,998	25.6	968	5.1	738	7.0	1,130	5.8	740	6.9	939	4.8	741	6.6
FOREIGN GOVERNMENT									885	4.7	167	1.6	1,263	6.5	243	2.3	1,270	6.5	245	2.2
NATIONAL FELLOWSHIPS+									800	4.2	522	5.0	790	4.0	590	5.5	886	4.6	560	5.0
INSTITUTIONAL FUNDS																				
Univ Teaching Asst	12,326	49.8	2,786	47.3	9,833	46.1	3,360	43.1	9,550	50.6	4,765	45.5	10,185	52.0	4,970	46.2	10,146	52.3	5,234	46.4
Univ Research Asst	9,079	36.7	1,421	24.1	8,249	38.7	1,957	25.1	7,903	41.9	3,137	30.0	8,429	43.1	3,249	30.2	8,474	43.7	3,533	31.3
Univ Fellowship	4,680	18.9	1,360	23.1	3,844	18.0	1,422	18.2	3,702	19.6	2,070	19.8	3,765	19.2	2,187	20.3	3,753	19.3	2,672	23.7
Other Univ Related	2,163	8.7	701	11.9	1,453	6.8	678	8.7	1,508	8.0	1,210	11.6	1,419	7.2	1,311	12.2	1,436	7.4	1,273	11.3
Business/Industry	979	4.0	108	1.8	632	3.0	142	1.8	996	5.3	558	5.3	1,052	5.4	575	5.3	1,006	5.2	572	5.1
PERSONAL FUNDS																				
Own Earnings	9678	39.1	2529	42.9	10,310	48.4	4,489	57.6	9,892	52.4	6,811	65.1	10,044	51.3	6,880	63.9	9,671	49.9	7,007	62.1
Spouse's Earnings	4,948	20.0	1,232	20.9	6,411	30.1	2,590	33.2	4,401	23.3	3,211	30.7	4,276	21.8	3,143	29.2	4,177	21.5	3,202	28.4
Family Support	1,632	6.6	495	8.4	2,876	13.5	1,215	15.6	4,356	23.1	2,361	22.6	4,589	23.4	2,438	22.6	4,645	23.9	2,529	22.4
Student Loans#	3,308	13.4	703	11.9	1,995	9.4	799	10.2	5,839	30.9	4,109	39.2	4,989	25.5	3,550	33.0	5,406	27.9	4,201	37.3
Other Sources	1,282	5.2	331	5.6	1,550	7.3	537	6.9	662	3.5	381	3.6	582	3.0	400	3.7	589	3.0	450	4.0
UNDUPLICATED TOTAL	24,761		5,894		21,323		7,799		18,871		10,469		19,578		10,769		19,396		11,275	

* Includes AEC/ERDA, NIH, USDA and NDEA Fellowships; NASA, NSF and NIH Traineeships; USDA Res. Asst.; Other HEW/HHS; Other Ed. Dept,; and Grad/Prof. Opp Program which were formerly shown separately. + Includes Woodrow Wilson Fellowships which were formerly shown separately.

Includes Guarenteed Student Loans, National Direct Student Loans, and Other Loans. @ PhDs who did not report sources of support are omitted from this table.

TABLE 2-24
PRIMARY SOURCES OF GRADUATE SUPPORT FOR 1988 PHD RECIPIENTS, BY SOURCE, FIELD, SEX AND RACE/ETHNICITY

Field	Total known support	Family support	University					Federal support	Student loan	Other
			Total	Teaching assistantship	Research assistantship	Fellowship	Other			
	Total									
Total, all fields	16,846	4,008	8,181	3,090	4,027	802	262	2,792	603	1,262
Sciences, total	13,389	3,490	6,286	2,651	2,757	660	218	2,230	574	809
Physical sciences	2,723	274	1,691	675	907	98	11	612	27	119
Mathematics	635	84	462	356	69	31	6	26	8	55
Computer sciences	447	103	227	99	113	9	6	61	6	50
Earth, atmospheric, and marine sciences	596	115	286	82	173	24	7	144	6	45
Life sciences	4,351	848	1,995	586	1,060	261	88	1,107	80	321
Psychology	2,543	1,283	687	323	206	86	72	143	379	51
Social sciences	2,094	783	938	530	229	151	28	137	68	168
Engineering, total	3,457	518	1,895	439	1,270	142	44	562	29	453
	Men									
Total, all fields	12,302	2,602	6,244	2,308	3,224	559	153	2,083	318	1,055
Sciences, total	9,087	2,104	4,486	1,906	2,036	430	114	1,574	292	631
Physical sciences	2,258	240	1,400	549	754	86	11	505	19	94
Mathematics	528	66	382	294	57	25	6	24	8	48
Computer sciences	400	87	204	86	108	6	4	58	2	49
Earth, atmospheric, and marine sciences	478	100	218	67	133	14	4	116	5	39
Life sciences	2,897	567	1,308	373	724	163	48	715	54	253
Psychology	1,151	563	334	165	107	35	27	68	163	23
Social sciences	1,375	481	640	372	153	101	14	88	41	125
Engineering, total	3,215	498	1,758	402	1,188	129	39	509	26	424
	Women									
Total, all fields	4,544	1,406	1,937	782	803	243	109	709	285	207
Sciences, total	4,302	1,386	1,800	745	721	230	104	656	282	178
Physical sciences	465	34	291	126	153	12	0	107	8	25
Mathematics	107	18	80	62	12	6	0	2	0	7
Computer sciences	47	16	23	13	5	3	2	3	4	1
Earth, atmospheric, and marine sciences	118	15	68	15	40	10	3	28	1	6
Life sciences	1,454	281	687	213	336	98	40	392	26	68
Psychology	1,392	720	353	158	99	51	45	75	216	28
Social sciences	719	302	298	158	76	50	14	49	27	43
Engineering, total	242	20	137	37	82	13	5	53	3	29
	White									
Total, all fields	12,067	3,288	5,463	2,091	2,586	575	211	2,104	532	680
Sciences, total	10,182	2,960	4,539	1,907	1,972	482	178	1,751	510	422
Physical sciences	1,895	233	1,130	431	621	70	8	440	19	74
Mathematics	406	68	280	216	42	17	5	14	7	37
Computer sciences	283	74	128	54	63	6	5	44	6	31
Earth, atmospheric, and marine sciences	483	106	225	70	133	18	4	120	6	26
Life sciences	3,364	709	1,520	485	774	193	68	919	72	144
Psychology	2,259	1,161	606	285	185	71	65	110	345	37
Social sciences	1,492	609	650	366	154	107	23	104	55	74
Engineering, total	1,885	328	924	184	614	93	33	353	22	258

TABLE 2-24 (continued)

PRIMARY SOURCES OF GRADUATE SUPPORT FOR 1988 PHD RECIPIENTS, BY SOURCE, FIELD, SEX AND RACE/ETHNICITY

Field	Total known support	Family support	University					Federal support	Student loan	Other
			Total	Teaching assistantship	Research assistantship	Fellowship	Other			
	Native American									
Total, all fields	36	16	8	3	5	0	0	6	3	3
Sciences, total	32	15	7	2	5	0	0	5	3	2
Physical sciences	4	1	1	0	1	0	0	2	0	0
Mathematics	2	0	1	1	0	0	0	0	1	0
Computer sciences	1	1	0	0	0	0	0	0	0	0
Earth, atmospheric, and marine sciences	2	1	1	0	1	0	0	0	0	0
Life sciences	10	4	4	1	3	0	0	2	0	0
Psychology	7	4	0	0	0	0	0	1	1	1
Social sciences	6	4	0	0	0	0	0	0	1	1
Engineering, total	4	1	1	1	0	0	0	1	0	1
	Hispanic									
Total, all fields	605	117	230	80	111	31	8	97	28	133
Sciences, total	498	102	187	67	87	27	6	79	27	103
Physical sciences	85	8	41	20	19	2	0	22	3	11
Mathematics	28	3	18	14	2	1	1	1	0	6
Computer sciences	6	0	1	0	1	0	0	0	0	5
Earth, atmospheric, and marine sciences	15	0	5	1	4	0	0	4	0	6
Life sciences	189	26	76	9	50	14	3	32	3	52
Psychology	89	38	15	4	5	5	1	13	16	7
Social sciences	86	27	31	19	6	5	1	7	5	16
Engineering, total	107	15	43	13	24	4	2	18	1	30
	Black									
Total, all fields	435	120	177	62	75	31	9	55	18	65
Sciences, total	374	108	148	51	63	26	8	50	18	50
Physical sciences	49	1	27	13	12	2	0	9	1	11
Mathematics	7	2	4	3	1	0	0	1	0	0
Computer sciences	4	2	1	0	1	0	0	1	0	0
Earth, atmospheric, and marine sciences	5	0	3	3	0	0	0	1	0	1
Life sciences	118	22	50	9	31	7	3	23	2	21
Psychology	90	43	24	5	8	7	4	11	10	2
Social sciences	101	38	39	18	10	10	1	4	5	15
Engineering, total	61	12	29	11	12	5	1	5	0	15
	Asian									
Total, all fields	3,213	386	2,054	754	1,134	139	27	461	11	301
Sciences, total	1,942	245	1,225	547	551	106	21	292	6	174
Physical sciences	596	25	427	189	214	21	3	124	1	19
Mathematics	163	7	141	109	21	11	0	8	0	7
Computer sciences	135	23	86	40	42	3	1	15	0	11
Earth, atmospheric, and marine sciences	73	6	43	7	28	5	3	15	0	9
Life sciences	567	74	307	70	188	38	11	109	1	76
Psychology	62	24	29	22	7	0	0	4	3	2
Social sciences	346	86	192	110	51	28	3	17	1	50
Engineering, total	1,271	141	829	207	583	33	6	169	5	127

SOURCE: *Summary Report 1989 Doctorate Recipients from U.S. Universities,* National Research Council

TABLE 2-25
PRIMARY SOURCES OF SUPPORT FOR DOCTORATE RECIPIENTS BY BROAD FIELD AND DEMOGRAPHIC GROUP, 1989

Primary Source of Support	Total	Men	Women	U.S. Cit.	Perm. Res.	Temp. Res.	U.S. Citizens: Am. Ind.	Asian	Black	Hisp.	White
Total All Fields											
Personal	40.7	34.5	51.6	48.4	32.0	14.7	51.8	31.7	58.8	45.7	48.7
University	40.5	44.0	34.6	35.1	52.9	57.5	26.5	40.0	25.5	31.2	35.4
Federal	11.4	12.6	9.2	12.0	8.2	9.7	19.3	20.4	8.3	15.9	11.7
Other	7.4	8.9	4.6	4.5	7.0	18.1	2.4	7.9	7.4	7.2	4.2
Physical Sciences*											
Personal	14.1	14.0	14.3	18.1	11.8	5.3	23.5	15.5	25.8	11.3	18.1
University	59.8	59.1	63.0	54.4	70.0	70.1	47.1	44.7	38.7	51.6	55.4
Federal	20.0	20.5	17.7	22.3	15.5	15.7	23.5	30.1	22.6	29.0	21.7
Other	6.1	6.4	5.0	5.1	2.7	8.9	5.9	9.7	12.9	8.1	4.8
Engineering											
Personal	16.2	16.5	13.3	21.8	20.5	9.8	14.3	17.9	23.8	31.3	22.0
University	54.7	54.4	57.9	46.6	60.7	61.9	28.6	50.0	38.1	25.0	47.0
Federal	15.8	15.2	22.5	20.2	12.0	12.0	57.1	19.1	4.8	18.8	20.4
Other	13.2	13.9	6.3	11.4	6.8	16.4	0.0	13.0	33.3	25.0	10.5
Life Sciences											
Personal	25.1	23.5	27.7	28.5	25.8	11.5	0.0	22.6	18.8	17.1	29.3
University	43.9	44.5	42.9	41.4	50.2	52.4	62.5	37.1	47.8	39.5	41.2
Federal	22.6	21.9	23.7	26.6	13.1	8.7	37.5	36.3	23.2	36.8	26.2
Other	8.4	10.1	5.7	3.5	10.9	27.4	0.0	4.0	10.1	6.6	3.3
Social Sciences											
Personal	53.1	48.2	59.1	58.6	48.2	25.2	62.5	49.2	48.9	61.3	59.1
University	35.5	39.4	30.8	32.5	38.2	50.5	25.0	37.7	30.4	27.0	32.8
Federal	6.0	5.6	6.5	6.4	3.7	4.6	12.5	6.6	17.0	6.3	5.9
Other	5.4	6.9	3.6	2.5	9.9	19.6	0.0	6.6	3.7	5.4	2.2
Humanities											
Personal	48.4	49.1	47.6	51.7	41.6	24.0	57.1	61.3	43.1	44.6	52.1
University	45.1	43.4	47.2	43.3	52.6	56.4	28.6	35.5	37.3	44.6	43.6
Federal	2.2	2.5	1.9	2.2	1.7	2.5	14.3	0.0	3.9	4.1	2.0
Other	4.2	5.0	3.3	2.7	4.0	17.1	0.0	3.2	15.7	6.8	2.3
Education											
Personal	76.5	74.4	78.0	80.0	57.3	38.8	81.0	82.0	76.9	68.6	80.6
University	14.5	13.7	15.1	13.0	34.4	27.4	4.8	12.0	16.6	14.0	12.7
Federal	2.5	2.9	2.1	2.4	0.8	3.7	9.5	4.0	2.4	12.4	2.1
Other	6.5	8.9	4.7	4.6	7.6	30.1	4.8	2.0	4.2	5.0	4.7
Professional/Other											
Personal	53.9	52.6	56.2	61.6	43.9	27.5	100.0	54.2	71.1	61.9	61.1
University	36.2	36.0	36.5	30.6	50.0	53.3	0.0	37.5	15.6	23.8	31.3
Federal	2.2	2.3	2.0	2.6	0.0	1.4	0.0	0.0	0.0	9.5	2.7
Other	7.7	9.1	5.2	5.2	6.1	17.8	0.0	8.3	13.3	4.8	4.9

NOTE: A recipient's "primary" source of support is the source with the largest reported percentage. "Personal" includes loans as well as own earnings and contributions from the spouse/family. "Other" includes U.S. nationally competitive fellowships, business/employer funds, foreign government, and other nonspecified sources. Percentages in this table are based on the number of Ph.D.s with known primary support. See Technical Notes in Appendix C for rates of nonresponse to this question.

*Includes mathematics and computer sciences.

SOURCE: *Summary Report 1989 Doctorate Recipients from U.S. Universities,* National Research Council

TABLE 2-26
PRIMARY SOURCES OF SUPPORT FOR NON-U.S. CITIZEN DOCTORATE RECIPIENTS BY VISA STATUS AND BROAD FIELD, 1989

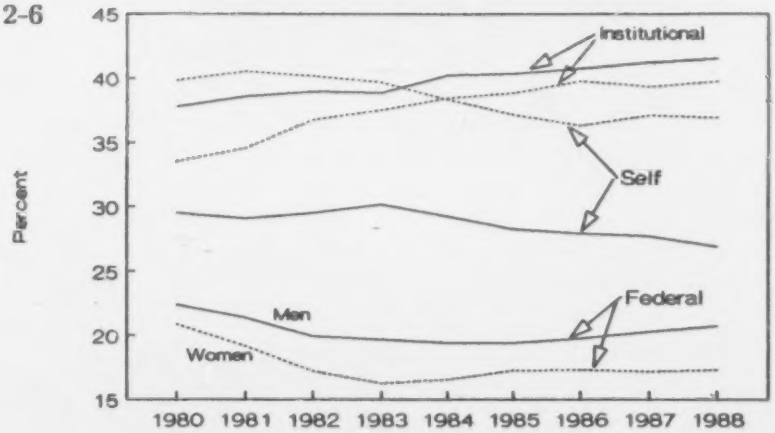
Primary Source of Support	All Fields	Physical Sci.*	Engineering	Life Sci.	Social Sci.	Humanities	Education	Prof./Other
PERMANENT RESIDENTS								
Personal†	32.0	11.8	20.5	25.8	48.2	41.6	57.3	43.9
University	52.9	70.0	60.7	50.2	38.2	52.6	34.4	50.0
Teaching Assistantship	24.2	37.3	18.8	11.4	20.9	39.3	18.3	28.9
Research Assistantship	21.7	30.0	39.0	28.4	9.4	2.9	6.9	12.3
Fellowship	4.6	1.4	2.6	7.0	5.2	7.5	6.1	4.4
Other	2.3	1.4	0.3	3.5	2.6	2.9	3.1	4.4
Federal	8.2	15.5	12.0	13.1	3.7	1.7	0.8	0.0
Research Assistantship	6.3	14.1	11.4	7.0	1.6	0.6	0.0	0.0
Other§	1.9	1.4	0.6	6.1	2.1	1.2	0.8	0.0
Other	7.0	2.7	6.8	10.9	9.9	4.0	7.6	6.1
National Fellowship	0.7	0.0	0.3	1.3	1.6	0.6	0.8	0.0
Business/Industry	1.1	0.9	1.9	1.3	1.0	0.0	0.0	1.8
Foreign Government	4.5	1.8	3.9	8.3	5.8	2.3	5.3	4.4
Other	0.7	0.0	0.6	0.0	1.6	1.2	1.5	0.0
TEMPORARY RESIDENTS								
Personal†	14.7	5.3	9.8	11.5	25.2	24.0	38.8	27.5
University	57.5	70.1	61.9	52.4	50.5	56.4	27.4	53.3
Teaching Assistantship	23.2	36.0	17.0	11.6	29.2	36.7	11.9	28.3
Research Assistantship	27.3	29.7	41.4	31.1	9.8	2.2	9.0	15.3
Fellowship	5.4	3.7	2.6	7.3	9.0	14.9	2.9	7.9
Other	1.7	0.8	0.9	2.4	2.5	2.5	3.7	1.7
Federal	9.7	15.7	12.0	8.7	4.6	2.5	3.7	1.4
Research Assistantship	8.2	15.2	11.1	6.5	1.8	0.0	0.8	0.0
Other§	1.5	0.5	0.8	2.2	2.8	2.5	2.9	1.4
Other	18.1	8.9	16.4	27.4	19.6	17.1	30.1	17.8
National Fellowship	1.3	0.7	0.5	2.8	2.2	0.7	2.9	0.6
Business/Industry	1.1	0.6	1.5	0.9	1.0	0.7	1.6	1.4
Foreign Government	13.9	6.9	13.8	20.8	13.3	12.4	22.2	13.6
Other	1.8	0.7	0.6	3.0	3.1	3.3	3.4	2.3

NOTE: The "primary" source of support is the source with the largest reported percentage. See Technical Notes in Appendix C for rates of nonresponse to this question.

*Includes mathematics and computer sciences.
†"Personal" includes all loans as well as earnings and contributions from the spouse/family.
§Includes traineeships and fellowships funded by major federal agencies, as well as support from the G.I. Bill and other miscellaneous sources. Federal loans are grouped under "Personal."

FULL-TIME S/E GRADUATE STUDENT SUPPORT, 1980-88

CHART 2-6



SOURCE: NSF Graph by CPST

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 2-27

EARNED DEGREES, BY LEVEL AND SEX, 1969-70 - 1994-95

Year	Associate degrees			Bachelor's degrees			Master's degrees			First-professional degrees			Doctor's degrees		
	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1869–70	—	—	—	[1] 9,371	[1] 7,993	[1] 1,378	0	0	0	[2]	[2]	[2]	1	1	0
1879–80	—	—	—	[1] 12,896	[1] 10,411	[1] 2,485	879	868	11	[2]	[2]	[2]	54	51	3
1889–90	—	—	—	[1] 15,539	[1] 12,857	[1] 2,682	1,015	821	194	[2]	[2]	[2]	149	147	2
1899–1900	—	—	—	[1] 27,410	[1] 22,173	[1] 5,237	1,583	1,280	303	[2]	[4]	[2]	382	359	23
1909–10	—	—	—	[1] 37,199	[1] 28,762	[1] 8,437	2,113	1,555	558	[2]	[2]	[2]	443	399	44
1919–20	—	—	—	[1] 48,622	[1] 31,980	[1] 16,642	4,279	2,985	1,294	[2]	[2]	[2]	615	522	93
1929–30	—	—	—	[1] 122,484	[1] 73,615	[1] 48,869	14,969	8,925	6,044	[2]	[2]	[2]	3,290	2,861	429
1939–40	—	—	—	[1] 186,500	[1] 109,546	[1] 76,954	26,731	16,508	10,223	[2]	[2]	[2]	2,299	1,946	353
1949–50	—	—	—	[1] 432,058	[1] 328,841	[1] 103,217	58,183	41,220	16,963	[2]	[2]	[2]	3,290	2,861	429
1959–60	—	—	—	[1] 392,440	[1] 254,063	[1] 138,377	74,435	50,898	23,537	[2]	[2]	[2]	9,829	8,801	1,028
1960–61	—	—	—	369,995	228,500	141,495	81,690	55,267	26,423	25,253	24,577	676	10,575	9,463	1,112
1961–62	—	—	—	388,680	234,671	154,009	88,414	59,710	28,704	25,607	24,836	771	11,622	10,377	1,245
1962–63	—	—	—	416,928	246,129	170,799	95,470	64,198	31,272	26,590	25,753	837	12,822	11,448	1,374
1963–64	—	—	—	466,944	270,319	196,625	105,551	70,339	35,212	27,209	26,357	852	14,490	12,955	1,535
1964–65	—	—	—	501,713	289,003	212,710	117,152	77,544	39,608	28,290	27,283	1,007	16,467	14,692	1,775
1965–66	111,607	63,779	47,828	520,923	299,871	221,052	140,548	93,063	47,485	30,124	28,982	1,142	18,237	16,121	2,116
1966–67	139,183	78,356	60,827	558,852	322,948	235,904	157,707	103,092	54,615	31,695	30,401	1,294	20,617	18,163	2,454
1967–68	159,441	90,317	69,124	632,758	358,105	274,653	176,749	113,519	63,230	33,939	32,402	1,537	23,089	20,183	2,906
1968–69	183,279	105,661	77,618	729,071	410,785	318,286	193,758	121,531	72,225	35,114	33,595	1,519	26,188	22,752	3,436
1969–70	206,023	117,432	88,591	792,656	451,380	341,276	208,291	125,624	82,667	34,578	32,794	1,784	29,866	25,890	3,976
1970–71	252,610	144,395	108,215	839,730	475,594	364,136	230,509	138,148	92,363	37,946	35,544	2,402	32,107	27,530	4,577
1971–72	292,119	166,317	125,802	887,273	500,590	386,683	251,633	149,550	102,083	43,411	40,723	2,689	33,363	28,090	5,273
1972–73	316,174	175,413	140,761	922,362	516,191	404,171	263,371	154,468	108,903	50,015	46,489	3,529	34,777	28,571	6,206
1973–74	343,924	188,591	155,333	945,776	527,313	418,463	277,033	157,842	119,191	53,816	48,530	5,286	33,816	27,365	6,451
1974–75	360,171	191,017	169,154	922,933	504,841	418,092	292,450	161,570	130,880	55,916	48,956	6,960	34,083	26,817	7,266
1975–76	391,454	209,996	181,458	925,748	504,925	420,821	311,771	167,248	144,523	62,649	52,892	9,757	34,064	26,267	7,797
1976–77	406,377	210,842	195,535	919,549	495,545	424,004	317,164	167,783	149,381	64,359	52,374	11,985	33,232	25,142	8,090
1977–78	412,246	204,718	207,528	921,204	487,347	433,857	311,620	161,212	150,408	63,581	52,270	14,311	32,131	23,658	8,473
1978–79	402,702	192,091	210,611	921,390	477,344	444,046	301,079	153,370	147,709	68,848	52,652	16,196	32,730	23,541	9,189
1979–80	400,910	183,737	217,173	929,417	473,611	455,806	298,081	150,749	147,332	70,131	52,716	17,415	32,615	22,943	9,672
1980–81	416,377	188,638	227,739	935,140	469,883	465,257	295,739	147,043	148,696	71,956	52,792	19,164	32,958	22,711	10,247
1981–82	434,515	196,939	237,576	952,998	473,364	479,634	295,546	145,532	150,014	72,032	52,223	19,809	32,707	22,224	10,483
1982–83	456,441	207,141	249,300	969,510	479,140	490,370	289,921	144,697	145,224	73,136	51,310	21,826	32,775	21,902	10,873
1983–84	452,416	202,762	249,654	974,309	482,319	491,990	284,263	143,595	140,668	74,407	51,334	23,073	33,209	22,064	11,145
1984–85	454,712	202,932	251,780	979,477	482,528	496,949	286,251	143,390	142,861	75,063	50,455	24,608	32,943	21,700	11,243
1985–86	446,047	196,166	249,881	987,423	485,923	501,900	288,567	143,508	145,059	73,910	49,261	24,649	33,653	21,819	11,834
1986–87 [3]	437,137	191,525	245,612	991,339	480,854	510,485	289,557	141,363	148,194	72,750	47,460	25,290	34,120	22,099	12,021
1987–88 [4]	430,000	188,000	242,000	989,000	472,000	517,000	292,000	142,000	150,000	72,000	46,000	25,000	34,000	22,000	12,000
1988–89 [5]	439,000	192,000	247,000	994,000	473,000	521,000	293,000	137,000	156,000	72,000	46,000	26,000	34,200	21,600	12,600
1989–90 [5]	448,000	195,000	253,000	1,006,000	475,000	530,000	301,000	143,000	158,000	72,000	46,000	26,000	34,400	21,500	12,900
1990–91 [5]	456,000	196,000	260,000	995,000	463,000	532,000	300,000	142,000	158,000	72,000	46,000	27,000	34,500	21,300	13,200
1991–92 [5]	457,000	194,000	263,000	1,011,000	468,000	543,000	302,000	143,000	159,000	72,000	45,000	27,000	34,600	20,900	13,700
1992–93 [5]	452,000	192,000	260,000	1,016,000	468,000	548,000	301,000	143,000	158,000	73,000	46,000	27,000	34,700	20,500	14,200
1993–94 [5]	447,000	191,000	255,000	1,006,000	464,000	542,000	299,000	142,000	157,000	72,000	44,000	28,000	34,800	20,100	14,700
1994–95 [5]	444,000	191,000	252,000	990,000	456,000	534,000	296,000	140,000	155,000	71,000	43,000	28,000	34,900	19,700	15,200

[1] Includes first-professional degrees.
[2] First-professional degrees are included with bachelor's degrees.
[3] Preliminary data.
[4] Estimated.
[5] Projected.
—Data not available.

NOTE.—Some data have been revised from previously published figures. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Earned Degrees Conferred: Projections of Education Statistics to 2000*; and Integrated Postsecondary Education Data System (IPEDS), "Completions" survey. (This table was prepared April 1989.)

SOURCE: Earned Degrees Conferred Series, 1971-72 through 1988-89, National Center for Education Statistics

TABLE 2-28

PERCENT OF BACHELORS AND MASTERS DEGREES AWARDED TO WOMEN, BY FIELD, SELECTED YEARS, 1971-72 - 1988-89

	BACHELORS DEGREES											MASTERS DEGREES										
Field	1971 -72	1973 -74	1975 -76	1977 -78	1980 -81	1982 -83	1984 -85	1985 -86	1986 -87	1987 -88	1988 -89	1971 -72	1973 -74	1975 -76	1977 -78	1980 -81	1982 -83	1984 -85	1985 -86	1986 -87	1987 -88	1988 -89
Agricultural & Nat. Resources	5.5	9.7	18.3	24.6	30.8	32.6	31.1	31.4	31.2	35.3	31.1	7.1	9.8	14.3	18.7	23.5	26.5	27.5	28.9	30.1	31.7	31.2
Architecture & Environ. Design	12.0	14.8	19.2	23.7	28.1	34.8	35.5	36.1	37.3	38.7	39.3	14.6	18.4	20.8	26.0	29.1	33.8	34.4	34.7	34.0	35.4	35.1
Area & Ethinc Studies	52.5	54.3	55.5	59.7	60.1	63.0	61.7	60.7	61.7	59.8	59.2	40.7	38.9	45.3	47.8	51.6	50.2	47.2	46.9	46.9	45.3	49.2
Business Management	9.7	13.1	19.8	27.3	36.7	42.0	45.1	45.0	46.5	45.9	46.7	3.9	6.6	11.6	16.9	25.0	28.9	31.0	31.1	33.0	33.5	33.6
Communications	35.5	38.4	41.5	46.9	54.7	58.6	59.6	59.5	60.0	60.7	60.4	34.4	36.8	41.8	49.3	53.4	54.0	58.2	59.9	59.2	60.6	59.6
Communications Technologies						47.4	46.7	46.7	46.7	44.1	43.9						51.0	38.3	36.5	36.5	50.6	44.6
Computer & Inform. Science	13.6	16.4	19.8	25.8	32.5	36.3	36.8	35.7	43.6	32.4	30.7	11.4	12.9	14.5	18.7	23.0	28.3	28.7	29.9	29.4	26.9	27.9
Education	74.1	73.5	72.8	72.5	75.0	75.8	75.9	75.9	76.2	76.9	77.7	57.3	59.9	64.3	67.7	71.5	72.3	72.5	72.9	74.0	75.1	75.3
Engineering	1.1	1.6	3.4	7.4	11.1	13.3	14.5	14.5	15.2	15.3	15.2	1.6	2.3	3.6	5.2	8.1	9.3	10.7	11.4	12.5	12.4	13.0
Engineering & Related Tech	0.8	1.4	2.1	2.8	5.8	8.0	7.7	7.8	7.7	8.0	8.2	4.0	4.3	4.3	6.9	12.1	9.8	10.5	16.1	13.6	16.0	12.8
Foreign Languages	75.1	76.4	76.4	76.1	75.6	74.3	73.4	72.4	72.6	72.8	73.3	65.1	66.1	66.7	70.8	67.0	65.7	67.6	70.4	70.4	68.1	68.5
Health Sciences	75.7	77.4	78.8	80.6	83.5	84.2	84.8	85.0	85.5	86.6	84.9	56.4	60.2	66.5	70.3	73.9	75.2	76.2	76.1	78.9	78.9	78.1
Home Econ & Vocational Econ	96.5	96.4	95.9	95.6	95.0	94.3	93.5	93.1	92.5	91.7	90.6	92.7	91.1	91.5	91.9	90.2	90.8	88.3	87.8	87.6	88.1	85.7
Law	6.6	10.5	18.8	28.6	50.0	58.4	61.2	65.0	68.6	68.3	60.3	5.8	7.1	12.0	14.6	17.8	23.3	23.3	25.1	26.8	26.3	28.9
Letters	60.1	58.0	56.9	57.2	59.8	65.8	65.8	65.7	65.8	66.7	67.1	57.7	56.6	58.3	61.8	61.1	65.1	65.2	65.5	65.0	65.8	65.6
Liberal/General Studies						54.1	55.3	55.1	56.4	56.4	57.2						61.5	61.9	61.2	59.2	61.9	64.8
Library Scinces	93.3	92.6	93.1	88.5	94.1	89.2	87.1	89.2	85.6	86.2	86.9	79.9	77.8	78.3	80.0	82.7	81.5	80.5	80.1	79.1	78.7	79.3
Life Sciences	29.6	31.5	34.8	38.7	44.1	46.1	47.8	48.1	48.5	50.3	50.2	33.1	30.6	31.8	35.5	38.9	43.6	47.7	47.8	48.7	49.3	49.6
Mathematics	39.1	41.0	40.7	41.3	42.8	43.8	46.1	46.5	46.4	46.4	46.0	29.8	31.0	34.0	34.0	34.1	34.5	35.0	35.2	39.1	40.1	39.9
Military Science & Tech	0.0	0.3	0.2	2.3	3.9	10.9	8.7	8.2	6.8	5.2	9.8	0.0	0.0	0.0	2.2	0.0	0.9	0.8	2.4	2.4	2.0	----
Multi-Interdisc Studies	31.1	37.1	45.0	47.3	51.0	49.6	52.2	52.2	53.4	52.8	53.8	39.2	45.8	46.5	37.5	39.8	42.8	42.1	42.2	42.0	41.9	39.0
Parks & Recreation						63.0	62.1	62.5	60.2	58.8	59.0						53.3	55.7	52.7	55.3	55.5	53.7
Philosophy & Religion						33.0	33.7	33.3	35.7	35.3	35.7						38.9	39.9	38.7	37.0	38.5	40.7
Physical Sciences	15.1	16.6	19.2	21.5	24.6	27.3	27.9	27.4	28.4	30.3	29.7	14.1	14.6	15.0	17.0	18.4	21.4	23.2	24.2	24.9	24.4	26.7
Protective Services						39.3	38.5	37.3	38.3	37.5	38.0						26.9	31.2	30.3	29.4	29.0	31.0
Psychology	46.4	50.5	54.4	58.9	65.0	67.5	68.1	69.0	68.9	70.0	70.8	38.4	39.8	46.7	52.0	58.0	61.4	63.8	64.8	65.2	67.1	67.4
Public Affairs	47.9	43.5	43.7	49.6	58.0	69.9	66.5	66.3	68.0	68.1	67.6	47.0	45.3	45.3	47.9	55.4	62.4	63.0	62.5	63.7	63.1	64.3
Social Sciences	36.3	36.6	37.9	40.0	44.2	44.6	44.1	43.8	44.0	43.9	44.4	28.2	28.8	31.6	33.2	37.6	37.8	38.3	39.2	39.5	39.4	40.2
Theology	27.8	28.1	27.4	24.1	25.4	27.[illegible]	27.1	26.3	24.2	25.0	22.8	23.4	27.2	32.1	39.5	33.6	27.1	34.8	35.8	33.9	33.8	35.1
Visual & Performing Arts	59.9	60.2	60.9	62.0	63.4	62.8	61.8	61.3	62.0	61.5	61.5	46.3	45.9	48.9	52.1	53.0	54.1	55.3	55.1	55.8	56.8	56.3
ALL FIELDS	43.7	44.4	45.6	47.2	49.8	50.6	50.7	50.8	51.5	52.0	52.6	40.6	43.1	46.4	48.3	50.3	50.1	49.9	50.3	51.2	51.5	51.9

Source: Earned Degrees Conferred Series, 1950–1987, National Center for Education Statistics, Redefined by the National Science Foundation and Science and Engineering Degrees: 1966–88, NSF 90–312, NSF

TABLE 2-29

PhD DEGREES BY SCIENCE AND ENGINEERING FIELD AND SEX, 1950 - 1989

	All Fields			Total S/E				Science/Engineering Fields																					
								Physical/Envt Sci			Engineering			Math/Comp Sci			Life Sciences			Psychology			Social Sciences			All Other Fields		
Year	Total	Women	%W	Number	%T	Women	%W	No.	omen	%W	No.	omen	W	No.	omen	%W	No.	omen	%W	No.	omen	%W	No.	omen	%W	No.	Women	W
1950	6,633	643	10	3,890	59	244	6	1,496	49	3	417	1	0.2	180	9	5	1,033	95	9	283	42	15	499	48	10	2,743	399	15
1951	7,338	674	9	4,615	63	291	6	1,681	64	4	520	1	0.2	184	9	5	1,192	102	9	425	57	13	616	56	9	2,720	383	14
1952	7,663	714	9	4,783	62	294	6	1,720	57	3	529	3	0.6	206	11	5	1,187	94	8	540	73	14	601	56	9	2,900	420	14
1953	8,309	792	10	5,114	62	322	6	1,714	62	4	518	1	0.2	241	14	6	1,443	123	9	563	79	14	615	43	7	3,195	470	15
1954	8,996	815	9	5,433	60	310	6	1,686	61	4	594	0	0.0	227	14	6	1,626	111	7	619	66	11	679	58	9	3,563	505	14
1955	8,840	826	9	5,436	61	302	6	1,713	52	3	599	0	0.0	250	11	4	1,505	107	7	688	84	12	681	48	7	3,404	524	15
1956	8,903	885	10	5,327	60	349	7	1,667	68	4	610	0	0.0	235	10	4	1,404	123	9	634	86	14	777	62	8	3,576	536	15
1957	8,756	939	11	5,233	60	345	7	1,674	71	4	596	1	0.2	249	13	5	1,449	122	8	550	90	16	716	48	7	3,523	594	17
1958	8,942	964	11	5,353	60	378	7	1,655	66	4	647	4	0.6	247	15	6	1,465	144	10	572	84	15	767	65	8	3,589	586	16
1959	9,360	989	11	5,635	60	376	7	1,812	69	4	714	1	0.1	262	15	5	1,427	120	8	635	96	15	765	73	10	3,725	613	16
1960	9,829	1,028	10	6,056	62	382	6	1,838	62	3	786	3	0.4	303	18	6	1,647	126	8	641	97	15	841	76	9	3,773	646	17
1961	10,575	1,112	11	6,531	62	449	7	1,991	70	4	943	6	0.6	344	17	5	1,846	144	9	703	136	19	904	76	8	4,044	663	16
1962	11,622	1,245	11	7,249	62	501	7	2,122	87	4	1,207	4	0.3	396	24	6	1,804	161	9	781	149	19	939	76	8	4,373	744	17
1963	12,822	1,374	11	8,055	63	573	7	2,380	95	4	1,376	11	0.8	490	36	7	1,908	184	10	844	144	17	1,055	103	10	4,767	801	17
1964	14,490	1,535	11	9,025	62	632	7	2,455	113	5	1,693	7	0.4	596	29	5	2,181	203	9	939	182	19	1,161	98	8	5,465	903	17
1965	16,467	1,775	11	10,252	62	709	7	2,829	127	4	2,124	10	0.5	688	60	9	2,474	246	10	847	159	19	1,290	107	8	6,215	1,066	17
1966	18,239	2,118	12	11,298	62	875	8	3,045	131	4	2,304	9	0.4	801	57	7	2,696	314	12	1,046	220	21	1,406	144	10	6,941	1,243	18
1967	20,621	2,457	12	12,759	62	1,013	8	3,462	162	5	2,614	11	0.4	870	60	7	2,900	354	12	1,231	232	19	1,682	194	12	7,862	1,444	18
1968	23,091	2,906	13	14,126	61	1,204	9	3,593	188	5	2,932	12	0.4	963	52	5	3,445	452	13	1,268	286	23	1,907	214	11	8,963	1,702	19
1969	26,189	3,436	13	15,839	60	1,375	9	3,859	206	5	3,377	12	0.4	1,161	70	6	3,779	484	13	1,551	356	23	2,112	247	12	10,350	2,081	20
1970	29,872	3,980	13	17,639	59	1,527	9	4,313	236	5	3,681	24	0.7	1,343	98	7	4,131	499	12	1,668	372	22	2,503	298	12	12,233	2,453	20
1971	32,113	4,579	14	18,466	58	1,800	10	4,391	246	6	3,654	23	0.6	1,327	96	7	4,534	624	14	1,782	427	24	2,778	384	14	13,647	2,779	20
1972	33,369	5,274	16	18,412	55	1,910	10	4,103	273	7	3,704	25	0.7	1,295	101	8	4,478	647	14	1,881	467	25	2,951	397	13	14,957	3,364	22
1973	34,790	6,215	18	18,598	53	2,268	12	4,016	274	7	3,560	64	1.8	1,264	117	9	4,524	734	16	2,089	605	29	3,145	494	16	16,192	3,927	24
1974	33,826	6,462	19	17,866	53	2,412	14	3,631	253	7	3,336	55	1.6	1,229	109	9	4,220	732	17	2,339	691	30	3,110	572	18	15,961	4,040	25
1975	34,066	7,267	21	17,784	52	2,637	15	3,628	302	8	3,151	67	2.1	1,188	124	10	4,252	782	18	2,442	754	31	3,123	608	19	16,302	4,630	28
1976	34,076	7,803	23	17,288	51	2,766	16	3,433	300	9	2,835	69	2.4	1,100	117	11	4,203	791	19	2,581	819	32	3,136	660	22	16,788	5,017	30
1977	33,244	8,094	24	16,937	51	2,958	17	3,344	320	10	2,599	74	2.8	1,039	128	12	4,199	791	19	2,761	991	36	2,995	654	22	16,307	5,136	31
1978	32,156	8,487	26	16,196	50	3,039	19	3,137	312	10	2,442	57	2.3	1,001	139	14	4,179	872	21	2,597	971	37	2,840	688	24	15,960	5,448	34
1979	32,756	9,201	28	16,363	50	3,310	20	3,104	350	11	2,517	83	3.3	966	152	16	4,501	1,031	23	2,674	1,071	40	2,899	680	25	16,393	5,891	36
1980	31,020	9,407	30	17,524	56	3,784	10	3,149	386	12	2,479	90	0.4	962	116	12	4,715	1,150	24	3,098	1,311	42	3,121	831	27	13,496	5,523	41
1981	31,357	9,892	32	17,996	57	4,116	23	3,210	365	11	2,528	99	3.9	960	138	14	4,786	1,221	26	3,358	1,473	44	3,154	820	26	13,361	5,776	43
1982	31,106	10,093	32	18,017	58	4,270	24	3,351	460	14	2,646	124	4.7	940	116	12	4,844	1,292	27	3,159	1,436	46	3,077	840	27	13,089	5,823	44
1983	31,280	10,533	34	18,393	59	4,624	25	3,439	468	14	2,781	124	4.5	987	149	15	4,756	1,366	29	3,347	1,597	48	3,083	920	30	12,887	5,909	46
1984	31,332	10,699	34	18,514	59	4,704	25	3,459	505	15	2,913	151	5.2	993	152	15	4,877	1,348	28	3,257	1,631	50	3,015	917	30	12,818	5,995	47
1985	31,291	10,744	34	18,610	59	4,811	26	3,433	575	17	3,166	198	6.3	998	139	14	4,903	1,409	29	3,117	1,541	49	2,994	950	32	12,581	5,933	47
1986	31,896	11,306	35	19,253	60	5,085	26	3,679	605	16	3,376	225	6.7	1,128	169	15	4,805	1,452	30	3,124	1,598	51	3,140	1,036	33	12,643	6,221	49
1987	32,367	11,426	35	19,713	61	5,237	27	3,840	640	17	3,712	242	6.5	1,190	190	16	4,812	1,531	32	3,177	1,699	53	2,961	937	31	12,654	6,189	49
1988	33,456	11,790	35	20,732	62	5,573	27	4,046	703	17	4,190	286	6.8	1,263	177	14	5,123	1,689	33	3,058	1,675	55	3,054	1,045	34	12,724	6,217	49
1989	34,319	12,510	36	21,145	62	5,854	28	3,987	763	19	4,536	373	8.2	1,473	263	18	5,194	1,763	34	3,209	1,800	56	2,746	892	32	13,174	6,656	51
50–59	83,760	8,241	10	50,822	61	3,211	6	16,820	619	4	5,744	12	0.2	2,281	121	5	13,733	1,141	8	5,529	759	14	6,715	559	8	32,938	5,030	15
60–69	163,945	18,986	12	101,192	62	7,713	8	27,574	1,241	5	19,358	85	0.4	6,632	423	6	24,480	2,668	11	9,851	1,961	20	13,297	1,335	10	62,753	11,273	18
70–79	330,288	67,352	20	175,548	53	24,667	14	37,100	2,866	8	31,479	541	1.7	11,752	1,181	10	43,123	7,446	17	22,814	7,168	31	29,280	5,465	19	154,740	42,685	28
80–89	319,424	84,100	26	148,020	46	36,631	25	27,560	4,004	15	23,601	1,253	5.3	8,158	1,169	14	38,496	10,769	28	25,637	12,288	48	24,565	7,251	30	103,529	47,369	46
Total	897,417	178,879	20	476,582	53	72,222	15	109,054	8,730	8	80,182	1,891	2.4	26,823	2,694	10	119,834	22,024	18	63,831	22,176	35	73,857	14,610	20	353,960	106,357	30

Note: Starting in 1960 data source is Survey of Earned Doctorates by the National Research Council.

Source: Earned Degrees Conferred Series, 1950–1989, National Center for Education Statistics, Redefined by the National Science Foundation

TABLE 2-30

MASTERS DEGREES BY SCIENCE AND ENGINEERING FIELD AND SEX (1950 – 1989)

	All Fields			Science/Engineering Fields																										All Other Fields		
				Total S/E				Physical Sciences			Engineering			Math/Comp Sci			Bio/Agri Sci			Psychology			Social Sciences										
YEAR	Total	Women	%W	Number	%T	Women	%W	No.	Women	%W	No.	Women	%W	No.	Women	%W	No.	Women	%W	No.	Women	%W	No.	Women	%W						No.	Women	%W
1950	58,219	16,962	29	16,596	29	1,856	11	3,184	265	8	4,496	15	0.3	974	190	20	4,158	534	13	1,316	368	28	2,468	484	20						41,623	15,126	36
1951	65,132	18,901	29	17,539	27	1,713	10	3,200	226	7	4,825	10	0.2	1,109	180	16	4,417	527	12	1,645	395	24	2,343	375	16						47,593	17,188	36
1952	63,471	19,934	31	15,544	24	1,527	10	3,054	224	7	4,091	18	0.4	802	139	17	4,184	467	11	1,406	340	24	2,007	339	17						47,927	18,407	38
1953	61,023	20,034	33	13,548	22	1,290	10	2,711	164	6	3,566	13	0.4	677	112	17	3,568	410	11	1,161	265	23	1,865	326	17						47,475	18,744	39
1954	56,823	18,678	33	13,399	24	1,352	10	2,374	177	7	4,204	16	0.4	706	127	18	3,007	358	12	1,254	369	29	1,854	306	17						43,424	17,324	40
1955	58,204	19,464	33	13,969	24	1,563	11	2,544	207	8	4,484	13	0.3	781	148	19	3,090	433	14	1,293	417	32	1,817	345	19						44,215	17,901	40
1956	59,294	19,897	34	14,061	24	1,438	10	2,655	220	8	4,724	19	0.4	898	179	20	2,867	406	14	973	283	29	1,944	331	17						45,233	18,459	41
1957	61,955	20,823	33	15,205	25	1,573	10	2,704	221	8	5,233	16	0.3	965	188	19	3,019	403	13	1,095	332	30	2,189	413	19						46,750	19,050	41
1958	65,614	21,362	33	16,840	26	1,779	11	3,034	271	9	5,788	20	0.3	1,234	240	19	3,179	458	14	1,235	399	32	2,370	391	16						48,774	19,583	40
1959	69,584	22,176	32	18,662	27	1,976	11	3,179	270	8	6,753	24	0.4	1,499	311	21	3,537	561	16	1,254	397	32	2,460	413	17						50,902	20,200	40
1960	74,497	23,560	32	20,012	27	2,074	10	3,387	327	10	7,159	26	0.4	1,765	337	19	3,751	573	15	1,406	425	30	2,544	386	15						54,485	21,486	39
1961	78,269	24,111	31	22,786	29	2,464	11	3,799	345	9	8,178	26	0.3	2,238	466	21	4,085	670	16	1,719	543	32	2,767	412	15						55,483	21,647	39
1962	84,689	26,184	31	25,146	30	2,812	11	3,929	385	10	8,909	40	0.4	2,660	501	19	4,672	785	17	1,832	563	31	3,124	538	17						59,743	23,372	39
1963	91,418	28,474	31	27,367	30	3,194	12	4,132	428	10	9,635	32	0.3	3,323	658	20	4,718	894	19	1,918	573	30	3,641	609	17						64,051	25,280	39
1964	101,122	32,110	32	30,271	30	3,567	12	4,567	410	9	10,827	34	0.3	3,603	689	19	5,357	1,084	20	2,059	668	33	3,858	662	17						70,851	28,543	40
1965	112,195	35,984	32	33,835	30	4,082	12	4,918	513	10	12,056	44	0.4	4,294	812	19	5,978	1,162	19	2,241	732	33	4,348	819	19						78,360	31,902	41
1966	140,772	47,588	34	38,083	27	4,882	13	4,992	528	11	13,678	76	0.6	5,010	1,018	20	6,666	1,380	21	2,530	850	34	5,207	1,030	20						102,689	42,706	42
1967	157,892	54,713	35	41,800	26	5,717	14	5,412	553	10	13,885	78	0.6	5,733	1,310	23	7,465	1,517	20	3,138	1,062	34	6,167	1,197	19						116,092	48,996	42
1968	177,150	63,401	36	45,425	26	6,512	14	5,508	636	12	15,188	99	0.7	6,081	1,361	22	8,315	1,864	22	3,482	1,159	33	6,851	1,394	20						131,725	56,889	43
1969	194,414	72,533	37	48,425	25	7,314	15	5,911	668	11	15,243	113	0.7	6,735	1,566	23	8,809	2,016	23	4,013	1,327	33	7,714	1,624	21						145,989	65,219	45
1970	209,387	83,241	40	49,318	24	8,577	17	5,948	847	14	15,597	172	1.1	7,107	1,809	25	8,590	2,216	26	4,120	1,566	38	7,956	1,967	25						160,069	74,664	47
1971	231,486	92,886	40	50,824	22	8,668	17	6,386	853	13	16,347	187	1.1	6,789	1,688	25	8,320	2,190	26	4,438	1,651	37	8,344	2,089	25						180,662	84,238	47
1972	262,774	102,689	41	53,567	21	9,557	18	6,307	888	14	16,802	281	1.7	7,186	1,777	25	8,914	2,327	26	5,293	2,033	38	9,065	2,251	25						199,207	93,132	47
1973	294,525	109,525	41	54,234	21	9,760	18	6,274	847	14	16,758	288	1.7	7,148	1,730	24	9,080	2,237	25	5,882	2,367	40	9,094	2,291	25						210,291	99,765	47
1974	278,259	119,915	43	54,175	19	10,545	19	6,087	887	15	15,393	362	2.4	7,116	1,793	25	9,605	2,410	25	6,616	2,630	40	9,358	2,463	26						224,084	109,370	49
1975	293,661	131,536	45	53,852	18	11,005	20	5,830	848	15	15,434	396	2.6	6,637	1,766	27	9,618	2,411	25	7,104	3,045	43	9,229	2,539	28						239,799	120,531	50
1976	313,001	145,256	46	54,747	17	12,072	22	5,485	825	15	16,170	589	3.6	6,466	1,690	26	9,823	2,619	27	7,859	3,671	47	8,944	2,678	30						258,254	133,184	52
1977	318,241	150,031	47	56,731	18	13,154	23	5,345	887	17	16,889	733	4.3	6,496	1,766	27	10,707	3,011	28	8,320	4,004	48	8,974	2,753	31						261,510	136,877	52
1978	312,816	151,108	48	56,237	18	13,690	24	5,576	946	17	17,015	871	5.1	6,421	1,717	27	10,711	3,226	30	8,194	4,263	52	8,320	2,667	32						256,579	137,418	54
1979	302,075	148,393	49	54,456	18	14,040	26	5,464	992	18	16,193	990	6.1	6,101	1,632	27	10,719	3,460	32	8,031	4,343	54	7,948	2,823	33						247,619	134,263	54
1980	299,095	147,936	49	54,391	18	14,383	26	5,233	975	19	16,846	1,190	7.1	6,515	1,800	28	10,278	3,326	32	7,861	4,464	57	7,658	2,628	34						244,704	133,553	55
1981	296,798	149,367	50	54,811	18	15,014	27	5,300	1,087	21	17,373	1,406	8.1	6,787	1,848	27	9,731	3,280	34	8,039	4,668	58	7,581	2,725	36						241,987	134,353	56
1982	296,480	150,639	51	56,925	19	15,976	28	5,526	1,201	22	18,594	1,684	9.1	7,666	2,220	29	9,724	3,509	36	7,849	4,621	59	7,566	2,741	36						239,555	134,663	56
1983	290,931	145,817	50	58,868	20	17,081	29	5,288	1,137	22	19,721	1,876	9.5	8,160	2,488	30	9,720	3,609	37	8,439	5,185	61	7,540	2,786	37						232,063	128,736	55
1984	285,462	141,464	50	59,569	21	17,675	30	5,568	1,315	24	20,352	2,159	10.6	8,939	2,765	31	9,330	3,602	39	8,073	5,093	63	7,307	2,741	38						225,893	123,789	55
1985	287,210	143,493	50	61,278	21	18,299	30	5,802	1,352	23	21,206	2,328	11.0	9,989	3,048	31	8,757	3,492	40	8,481	5,417	64	7,043	2,962	38						225,932	125,194	55
1986	289,823	145,891	50	62,526	22	19,182	31	5,910	1,434	24	21,314	2,471	11.6	11,241	3,528	31	8,572	3,550	41	8,363	5,426	65	7,126	2,773	39						227,297	126,709	56
1987	290,532	148,877	51	63,018	22	19,538	31	5,638	1,413	25	22,281	2,841	12.8	11,808	3,797	32	8,831	3,651	41	8,165	5,327	65	6,295	2,509	40						227,514	129,339	57
1988	300,091	154,688	52	63,897	21	19,481	30	5,650	1,379	24	22,891	2,854	12.5	12,600	3,841	30	8,559	3,548	41	7,925	5,326	67	6,272	2,533	40						236,194	135,207	57
1989	309,762	160,780	52	64,873	21	20,158	31	5,684	1,518	27	23,713	3,080	13.0	12,816	3,989	31	7,726	3,384	44	8,579	5,780	67	6,355	2,427	38						236,194	135,207	57
50–59	619,319	198,049	32	155,403	25	16,067	10	28,639	2,245	8	48,164	163	0.3	9,625	1,814	19	35,026	4,557	13	12,632	3,565	28	21,317	3,723	17						463,916	181,982	39
60–69	1,212,618	408,658	34	333,150	27	42,618	13	46,555	4,792	10	114,758	570	0.5	41,462	8,718	21	59,816	11,945	20	24,338	7,922	33	46,221	8,671	19						879,468	366,040	42
70–79	2,776,215	1,234,500	44	537,941	19	111,058	21	56,702	8,820	16	162,596	4,869	3.0	67,465	17,368	26	96,087	26,107	27	65,857	29,573	45	87,232	24,321	28						2,238,274	1,123,442	50
80–89	2,946,184	1,488,952	51	600,158	20	176,787	29	55,599	12,811	23	204,291	21,889	10.7	96,521	29,324	30	91,228	34,931	38	81,774	51,307	63	70,743	26,525	37						2,337,333	1,308,750	56
TOTAL	7,554,336	3,330,159	44	1,626,650	22	346,530	21	189,495	28,668	15	529,811	27,491	5.2	215,073	57,224	27	282,157	77,540	27	184,601	92,367	50	225,513	63,240	28						5,918,991	2,978,214	50

Source: Earned Degrees Conferred Series, 1950–1989, National Center for Education Statistics, Redefined by the National Science Foundation

TABLE 2-31

BACHELORS DEGREES BY SCIENCE AND ENGINEERING FIELD AND SEX, 1950 – 1989

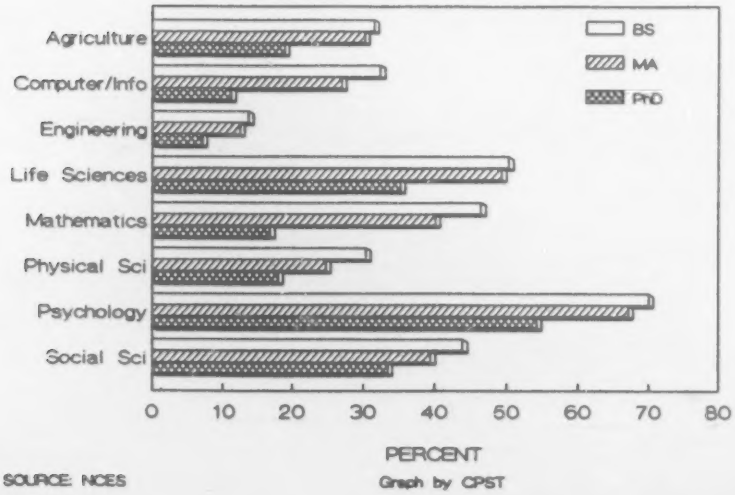
	All Fields			Total S/E				Science/Engineering Fields																		All Other Fields		
								Physical Sciences			Engineering			Math/Comp Sci			Bio/Agri Sci			Psychology			Social Sciences					
Year	Total	Women	%W	Number	%T	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W
1950	433,734	103,915	24	154,933	36	18,215	12	17,725	1,737	10	52,248	175	0	6,392	1,448	23	39,101	4,926	13	9,582	3,524	37	29,887	6,405	21	278,801	85,700	31
1951	384,352	105,009	27	125,957	33	16,135	13	14,296	1,420	10	41,473	87	0	5,753	1,442	25	32,271	4,253	13	7,819	2,983	38	24,345	5,950	24	258,395	88,874	34
1952	331,924	104,895	32	100,411	30	15,309	15	12,145	1,332	11	30,549	60	0	4,721	1,332	28	25,231	3,805	15	6,622	2,839	43	21,143	5,941	28	231,513	89,586	39
1953	304,857	104,037	34	86,142	28	14,066	16	10,414	1,277	12	24,189	37	0	4,396	1,274	29	21,835	3,475	16	5,946	2,516	42	19,362	5,489	28	218,715	89,969	41
1954	292,880	105,380	36	82,376	28	14,270	17	9,880	1,273	13	22,329	65	0	4,090	1,368	33	21,584	3,505	16	5,758	2,673	46	18,735	5,386	29	210,504	91,110	43
1955	267,401	103,799	36	80,901	28	13,778	17	10,516	1,362	13	22,589	62	0	4,034	1,310	32	19,927	3,250	16	5,532	2,523	46	18,303	5,251	29	206,500	90,021	44
1956	301,298	111,727	36	87,720	29	14,474	17	11,672	1,501	13	26,312	76	0	4,660	1,523	33	19,890	3,382	17	5,865	2,557	45	19,521	5,435	28	223,578	97,253	43
1957	340,347	117,609	35	98,509	29	15,291	16	12,934	1,613	12	31,211	81	0	5,546	1,720	31	21,903	3,576	16	6,191	2,666	43	20,724	5,635	27	241,838	102,318	42
1958	365,748	122,800	34	108,727	30	15,921	15	14,352	1,669	12	35,332	109	0	6,924	1,971	28	23,069	3,670	16	6,930	2,867	41	22,120	5,635	25	257,021	106,879	42
1959	385,151	130,283	34	116,802	30	17,327	15	15,460	1,786	11	38,134	121	0	9,019	2,515	28	23,861	4,127	17	7,383	2,906	39	22,945	5,892	26	268,349	112,956	42
1960	394,899	139,385	35	120,937	31	19,362	16	16,057	2,016	13	37,808	145	0	11,437	3,125	27	24,141	4,491	19	8,111	3,326	41	23,383	6,259	27	273,962	120,023	44
1961	401,784	145,884	36	121,660	30	20,595	17	15,500	2,008	13	35,866	134	0	13,127	3,644	28	23,900	4,822	20	8,524	3,431	40	24,743	6,556	26	280,124	125,289	45
1962	420,485	158,470	38	127,469	30	23,485	18	15,894	2,146	14	34,735	125	0	14,610	4,255	29	25,200	5,470	22	9,638	3,821	40	27,392	7,668	28	293,016	134,985	46
1963	450,592	175,842	39	135,964	30	27,099	20	16,276	2,238	14	33,458	130	0	16,121	4,958	31	27,801	6,174	22	11,062	4,557	41	31,246	9,042	29	314,628	148,743	47
1964	502,104	202,291	40	153,361	31	32,473	21	17,527	2,450	14	35,226	159	0	18,677	5,995	32	31,611	7,213	23	13,959	5,516	41	36,961	11,140	30	348,743	169,818	49
1965	538,930	219,260	41	164,936	31	36,213	22	17,916	2,532	14	36,795	139	0	19,666	6,453	33	34,842	8,277	24	14,721	6,033	41	40,994	12,779	31	373,994	183,047	49
1966	555,813	224,491	40	173,471	31	39,482	23	17,186	2,333	14	35,815	146	0	20,182	6,702	33	36,864	8,464	23	17,022	6,981	41	46,402	14,856	32	382,142	185,009	48
1967	594,862	239,562	40	187,849	32	44,002	23	17,794	2,402	13	36,188	184	1	21,530	7,334	34	39,408	8,948	23	19,496	7,906	40	53,433	17,328	32	407,013	195,560	48
1968	671,591	278,761	42	212,174	32	53,463	25	19,442	2,674	14	37,614	211	1	24,084	8,841	37	43,260	10,091	23	23,972	10,144	42	63,802	21,502	34	459,417	225,298	49
1969	769,883	322,750	42	244,519	32	63,196	26	21,591	2,952	14	41,553	313	1	28,283	10,348	37	48,713	11,308	23	29,495	12,719	43	74,904	25,556	34	525,164	259,554	49
1970	833,322	346,373	42	264,122	32	68,878	26	21,551	2,969	14	44,772	338	1	29,109	10,516	36	52,129	11,875	23	33,854	14,741	44	82,707	28,439	34	569,200	277,495	49
1971	884,386	370,166	42	271,176	31	72,996	27	21,549	3,014	14	45,387	365	1	27,306	9,818	36	51,461	11,803	23	38,154	17,037	45	87,319	30,959	35	613,210	297,170	48
1972	937,884	393,232	42	281,228	30	77,671	28	20,887	3,148	15	46,003	501	1	27,250	9,784	36	53,484	12,694	24	43,421	20,154	46	90,183	31,390	35	656,656	315,561	48
1973	980,707	412,348	42	295,391	30	83,839	28	20,809	3,121	15	46,989	580	1	27,528	9,985	36	59,486	14,570	24	48,096	22,986	48	92,483	32,597	35	685,316	328,507	48
1974	1,009,654	426,843	43	305,062	30	91,793	30	21,297	3,536	17	43,530	706	2	26,570	9,719	37	66,226	17,836	26	52,256	26,407	51	93,183	33,589	36	703,592	337,050	48
1975	997,922	430,288	44	294,920	30	93,342	32	20,896	3,838	18	40,085	860	2	23,385	8,656	37	72,710	20,911	29	51,436	27,103	53	86,428	32,074	37	636,743	336,826	49
1976	997,504	435,745	44	292,174	29	95,597	33	21,559	4,139	19	39,114	1,443	4	21,749	7,678	35	77,301	23,789	31	50,363	27,376	54	82,088	31,172	38	642,269	340,148	49
1977	993,008	441,219	44	288,543	29	97,453	34	22,618	4,551	20	41,581	2,086	5	20,729	7,488	36	78,472	25,609	33	47,784	27,102	57	77,349	30,617	40	639,885	343,766	49
1978	997,185	453,546	45	288,187	29	100,060	35	23,175	4,987	22	47,411	3,497	7	19,925	7,110	36	77,138	26,954	35	45,057	26,540	59	75,481	30,972	41	642,030	353,486	50
1979	1,000,562	466,259	47	288,625	29	102,292	35	23,363	5,287	23	53,720	4,919	9	20,670	7,421	36	75,085	27,548	37	43,012	26,363	61	72,775	30,754	42	643,715	363,967	51
1980	940,251	462,501	49	291,983	29	105,974	36	23,661	5,651	24	59,240	6,014	10	22,686	8,247	36	71,617	27,596	39	42,513	26,923	63	72,266	31,543	44	648,268	356,527	52
1981	946,877	470,882	50	294,867	31	106,783	37	24175	5980	25	64,066	7,117	11	26,406	9,734	37	68,066	27,476	40	41,364	26,917	65	70,766	31,218	44	652,010	364,099	56
1982	984,043	484,812	50	302,118	31	111,473	37	24372	6339	26	67,791	8,337	12	32,139	12,173	38	65,041	26,926	41	41,539	27,783	67	71,236	31,603	44	681,925	373,339	56
1983	980,679	495,694	51	307,229	32	114,022	37	23497	6461	27	72,954	9,719	13	37,239	14,490	39	63,237	26,560	40	40,825	27,597	68	69,477	30,785	44	673,450	381,672	57
1984	9[illegible]3,345	496,837	50	314,666	32	115,358	37	23759	6591	28	76,531	10,833	14	45,777	17,980	39	59,613	25,360	43	40,375	27,426	68	68,611	29,826	43	671,679	381,579	57
1985	990,880	501,617	51	321,739	32	118,837	38	23847	6698	28	77,871	11,316	15	54,368	21,467	39	57,812	25,148	43	40,237	27,422	68	67,584	29,387	43	669,141	382,780	57
1986	1,000,352	507,556	51	323,950	32	120,566	38	21882	6050	27	77,061	11,203	14	58,583	22,742	39	56,465	24,822	44	40,937	28,246	69	69,042	29,994	43	676,402	386,989	57
1987	1,003,532	518,529	52	318,942	32	123,309	39	20155	5733	28	74,705	11,473	15	56,553	21,615	38	56,215	24,623	44	43,195	29,796	69	68,119	30,069	44	684,590	395,220	58
1988	1,006,033	524,797	52	308,760	31	122,089	40	17817	5433	30	70,406	10,840	15	51,018	18,813	37	54,260	24,549	45	45,378	31,794	70	69,861	30,660	44	697,273	402,708	58
1989	1,017,667	534,570	53	304,231	30	122,175	40	17204	5107	30	66,296	10,062	15	45,874	16,432	36	49,826	22,725	46	48,516	34,335	71	76,515	33,514	44	713,436	412,395	58
50–59	3,437,882	1,108,454	32	1,042,478	30	154,786	15	129,394	14,970	12	324,364	873	0	55,535	15,901	29	248,672	37,971	15	67,428	28,054	42	217,085	57,019	26	2,395,214	954,666	40
60–69	5,300,533	2,108,696	40	1,642,340	31	359,370	22	175,183	23,751	14	365,058	1,686	0	187,699	61,655	33	335,740	75,258	22	155,400	64,334	41	423,260	132,686	31	3,658,193	1,747,326	48
70–79	9,621,114	4,177,997	43	2,869,408	30	883,921	31	217,694	38,590	18	448,572	15,295	3	244,221	88,175	36	665,492	193,489	29	453,443	235,809	52	839,986	312,563	37	6,432,416	3,294,076	49
80–89	9,836,659	4,997,694	51	3,088,485	31	1,160,586	38	220,349	60,043	27	706,923	96,914	14	430,663	163,693	38	602,192	255,785	42	424,879	288,239	68	703,479	308,599	44	6,748,174	3,837,308	57
TOTAL	28,195,998	12,392,041	44	8,[illegible]42,711	31	2,558,665	30	742,620	137,354	18	1,844,917	114,768	6	918,118	329,424	36	1,852,096	562,503	30	1,101,150	616,436	56	2,183,810	810,867	37	19,233,997	9,833,376	51

Source: Earned Degrees Conferred Series, 1950-1989, National Center for Education Statistics, redefined by the National Science Foundation

TABLE 2-32
BACHELORS DEGREE AWARDS, 1968 - 1989

Year	All Fields			S&E			NS&E		
	Number	Women	%W	Number	Women	%W	Number	Women	%W
1968	671,591	278,761	41.5	212,174	53,463	25.2	124,400	21,817	17.5
1969	769,683	322,750	41.9	244,519	63,196	25.8	140,120	24,921	17.8
1970	833,322	346,373	41.6	264,122	68,878	26.1	147,561	25,698	17.4
1971	884,386	370,166	41.9	271,176	72,996	26.9	145,703	25,000	17.2
1972	937,884	393,232	41.9	281,228	77,671	27.6	147,624	26,127	17.7
1973	980,707	412,346	42.0	295,391	83,839	28.4	154,812	28,256	18.3
1974	1,008,654	428,843	42.5	305,062	91,793	30.1	159,613	31,797	19.9
1975	987,922	430,268	43.6	294,920	93,342	31.6	157,056	34,165	21.8
1976	997,504	435,745	43.7	292,174	95,597	32.7	159,723	37,049	23.2
1977	993,008	441,219	44.4	288,543	97,453	33.8	163,400	39,734	24.3
1978	997,165	453,546	45.5	288,167	100,060	34.7	167,649	42,548	25.4
1979	1,000,562	466,259	46.6	288,625	102,292	35.4	172,838	45,175	26.1
1980	940,251	462,501	49.2	291,983	105,974	36.3	177,204	47,508	26.8
1981	946,877	470,882	49.7	294,867	106,783	36.7	182,735	48,648	26.6
1982	964,043	484,812	50.3	302,118	111,473	37.3	189,343	52,087	27.5
1983	980,679	495,694	50.5	307,229	114,022	37.3	196,927	55,640	28.3
1984	986,345	496,937	50.4	314,666	115,358	37.4	205,680	58,106	28.3
1985	990,880	501,617	50.6	321,739	118,837	37.6	213,918	62,028	29.0
1986	1,000,352	507,555	50.7	323,950	120,566	37.9	213,971	62,326	29.1
1987	1,003,532	518,529	51.7	318,942	123,309	38.7	207,628	63,444	30.6
1988	1,006,033	524,797	52.2	308,760	122,089	39.5	193,521	59,635	30.8
1989	1,017,667	534,570	52.5	304,321	122,175	40.1	179,200	54,326	30.3

CHART 2-7
PERCENT WOMEN AMONG GRADUATES BY FIELD, 1988



SOURCE: NCES

Graph by CPST

SOURCE: U.S. Dept. of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred, 1988–89" Survey

TABLE 2-33

BACHELORS, MASTERS AND DOCTORAL DEGREES CONFERRED BY SEX AND FIELD, 1988–89

Field of Study	Bachelors Degrees			Masters Degrees			Doctorate Degrees		
	Total	Women	% Wom	Total	Women	% Wom	Total	Women	% Wom
All Fields	1,017,667	534,570	52.5	309,762	160,780	51.9	35,759	13,054	36.5
Agribusiness & Ag Production	4,736	1,159	24.5	654	159	24.3	203	41	20.2
Agricultural Sciences	5,920	2,365	39.9	1,684	580	34.4	752	152	20.2
Ag Sciences, General	976	290	29.7	176	55	31.3	21	4	19.0
Animal Sciences	2,814	1,307	46.4	465	178	38.3	211	43	20.4
Food Sciences	558	328	58.8	300	159	53.0	112	30	26.8
Plant Sciences	1,372	388	28.3	587	143	24.4	317	59	18.6
Soil Sciences	103	22	21.4	108	32	29.6	57	8	14.0
Ag Sciences Other	97	30	30.9	48	13	27.1	34	8	23.5
Renewable Natural Resources	2,832	669	23.6	907	275	30.3	229	39	17.0
Forestry Production & Sciences	1,033	165	16.0	454	128	28.2	135	18	13.3
Wildlife Management	670	173	25.8	118	32	27.1	15	4	26.7
Renewable Nat Resources Other	1,129	331	29.3	335	115	34.3	79	17	21.5
Architecture & Envt Design	9,191	3,611	39.3	3,378	1,187	35.1	86	23	26.7
Architecture	4,681	1,285	27.5	1,675	474	28.3	30	11	36.7
Arch & Envt Design Other	4,510	2,326	51.6	1,703	713	41.9	56	12	21.4
Area and Ethnic Studies	3,949	2,336	59.2	978	481	49.2	110	53	48.2
Business Management	238,699	109,828	46.0	72,961	24,517	33.6	1,150	306	26.6
Business Management, General	41,024	19,034	46.4	12,936	4,273	33.0	188	45	23.9
Accounting	43,454	23,211	53.4	3,067	1,340	43.7	68	21	30.9
Banking and Finance	26,485	8,951	33.8	4,850	1,407	29.0	51	9	17.6
Business Admin & Mgmt	69,069	31,035	44.9	38,433	12,446	32.4	547	152	27.8
Business Economics	3,452	1,206	34.9	176	51	29.0	33	9	27.3
Human Resources Development	1,622	845	52.1	770	435	56.5	5	4	80.0
Institutional Management	5,632	2,687	47.7	367	164	44.7	5	0	0.0
Labor/Industrial Relations	993	526	53.0	659	378	57.4	16	5	31.3
Management Info Systems	3,053	1,266	41.5	1,009	245	24.3	6	2	33.3
Management Sciences	2,480	1,002	40.4	1,107	274	24.8	55	13	23.6
Marketing Management & Research	30,040	15,175	50.5	2,093	992	47.4	38	10	26.3
Personnel Management	1,754	935	53.3	204	96	47.1	2	1	50.0
Business & Management, Other	9,641	3,952	41.0	7,290	2,418	33.1	136	35	25.7
Business & Office	2,774	2,138	77.1	23	8	34.8	0	0	
Marketing & Distribution	5,186	3,274	63.1	170	72	42.4	0	0	
Communications	47,385	28,828	60.8	3,926	2,386	60.8	242	107	44.2
Advertising	2,651	1,712	64.6	204	127	62.3	2	0	0.0
Journalism	11,522	7,331	63.6	1,270	785	61.8	29	12	41.4
Public Relations	1,711	1,194	69.8	92	71	77.2	0	0	
Radio & TV	6,376	3,049	47.8	279	127	45.5	20	10	50.0
Communicatons, Other & General	25,125	15,542	61.9	2,081	1,276	61.3	191	85	44.5
Communications Technologies	1,240	544	43.9	307	137	44.6	6	4	66.7
Computer & Information Sciences	30,637	9,416	30.7	9,362	2,623	28.0	538	81	15.1
Comp & Info Sciences General	24,155	7,048	29.2	7,756	2,040	26.3	504	63	12.5
Computer Programming	348	80	23.0	130	21	16.2	0	0	
Data Processing	506	212	41.9	30	13	43.3	0	0	
Info Science & Systems	4,092	1,563	38.2	1,061	444	41.8	28	17	60.7
Comp & Info Sci, Other	1,536	513	33.4	385	105	27.3	6	1	16.7
Education	96,986	75,326	77.7	82,238	61,952	75.3	6,783	3,889	57.3
Education, General	2,238	1,820	81.3	8,780	6,558	74.7	1,046	633	60.5
Bilingual/Bicultural Education	95	87	91.6	158	104	65.8	48	21	43.8
Curriculum and Instruction	424	389	91.7	4,543	3,573	78.6	747	483	64.7
Education Administraton	74	52	70.3	9,802	5,640	57.5	1,911	944	49.4
Special Education	6,671	6,230	93.4	8,872	7,829	88.2	253	207	81.8
Student Counseling/Personnel Svcs	81	63	77.8	9,569	7,350	76.8	409	231	56.5
Teacher Ed, General	52,691	47,878	90.9	18,749	15,938	85.0	405	268	66.2
Elementary Education	43,326	40,188	92.8	11,356	10,332	91.0	94	77	81.9
Junior High/Middle School Ed	768	626	81.7	519	488	94.0	0	0	
Pre-elementary Educaton	4,480	4,424	98.8	1,490	1,467	98.5	23	19	82.6
Secondary Education	3,647	2,234	61.3	3,487	2,296	65.8	80	36	45.0
Teacher Ed General, Other	472	407	86.2	1,897	1,355	71.4	208	138	66.4

TABLE 2-33 (continued)

BACHELORS, MASTERS AND DOCTORAL DEGREES CONFERRED BY SEX AND FIELD, 1988-89

Field of Study	Bachelors Degrees			Masters Degrees			Doctorate Degrees		
	Total	Women	% Wom	Total	Women	% Wom	Total	Women	% Wom
Education (continued)									
Teacher Ed, Specific	33,594	17,958	53.5	15,755	10,590	67.2	911	484	53.1
Agricultural Education	573	91	15.9	525	285	54.3	26	7	26.9
Art Education	1,021	833	81.6	554	450	81.2	50	23	46.0
Business Education	1,885	1,498	79.5	557	449	80.6	35	24	68.6
English Education	1,674	1,345	80.3	475	384	80.8	13	11	84.6
Health Education	1,538	1,196	77.8	811	621	76.6	111	78	70.3
Home Economics Education	530	526	99.2	195	192	98.5	16	14	87.5
Industrial Arts Education	1,935	263	13.6	662	150	22.7	36	10	27.8
Mathematics Education	1,690	1,051	62.2	669	457	68.3	41	24	58.5
Music Education	2,846	1,633	57.4	847	457	54.0	80	33	41.3
Physical Education	12,449	5,890	47.3	3,538	1,814	51.3	203	90	44.3
Reading Education	251	227	90.4	3,506	3,389	96.7	82	69	84.1
Science Education	1,446	807	55.8	734	434	59.1	36	16	44.4
Social Science Education	840	447	53.2	118	73	61.9	2	1	50.0
Social Studies Education	1,494	585	39.2	240	111	46.3	8	2	25.0
Trade & Industrial Education	1,199	338	28.2	544	257	49.1	46	16	34.8
Teacher Ed Specific, Other	2,223	1,228	55.2	1,780	1,057	59.4	126	66	52.4
Education, Other	876	643	73.4	2,611	1,876	71.8	290	162	55.9
Engineering	66,296	10,060	15.2	23,713	3,080	13.0	4,521	400	8.8
Engineering, General	2,570	390	15.2	958	110	11.5	254	18	7.1
Aerospace Engineering	2,944	301	10.2	855	64	7.5	154	7	4.5
Agricultural Ingineering	461	47	10.2	167	14	8.4	96	6	6.3
Architectural Engineering	512	89	17.4	63	3	4.8	5	0	
Bioengineering	672	224	33.3	389	87	23.6	81	20	24.7
Ceramic Engineering	275	72	26.2	101	28	27.7	25	2	8.0
Chemical Engineering	3,684	1,103	29.9	1,097	212	19.3	599	79	13.2
Civil Engineering	7,316	1,038	14.2	2,902	366	12.6	503	48	9.5
Computer Engineering	2,198	327	14.9	823	126	15.3	74	9	12.2
Elec/Electronic, Comm. Eng	21,909	2,831	12.9	7,024	790	11.2	1,002	66	6.6
Engineering Mechenics	188	16	8.5	182	23	12.6	97	8	8.2
Engineering Physics	337	34	10.1	68	10	14.7	44	3	6.8
Engineering Scinece	262	47	17.9	283	45	15.9	51	5	9.8
Environ Health engineering	104	37	35.6	324	76	23.5	34	8	23.5
Geological & Geophysical Eng	151	32	21.2	61	4	6.6	4	1	25.0
Industrial Engineering	3,973	1,206	30.4	1,823	358	19.6	203	26	12.8
Materials Engineering	421	116	27.6	453	107	23.6	245	37	15.1
Mechanical Engineering	14,883	1,654	11.1	3,517	303	8.6	634	24	3.8
Metallurgical Engineering	418	73	17.5	253	45	17.8	96	10	10.4
Mining & Mineral Engineering	99	9	9.1	77	7	9.1	33	1	3.0
Naval & Marine Engineering	332	17	5.1	52	2	3.8	9	1	11.1
Nuclear Engineering	287	35	12.2	246	27	11.0	83	5	6.0
Ocean Engineering	97	16	16.5	71	6	8.5	15	1	6.7
Petroleum Engineering	452	47	10.4	218	16	7.3	32	1	3.1
Survey & Mapping Sciences	122	19	15.6	34	3	8.8	5	1	20.0
Systems Engineering	285	56	19.6	269	45	16.7	21	2	9.5
Textile Engineering	33	12	36.4	21	4	19.0	0	0	
Engineering, Other	1,311	212	16.2	1,402	199	14.2	122	11	9.0
Engineering & Related Technologies	18,977	1,560	8.2	828	106	12.8	12	0	0.0
Electrical & Electronic Tech	5,191	367	7.1	46	5	10.9	0	0	
Industrial Production Technology	4,828	478	9.9	183	16	8.7	5	0	0.0
Mechanical & Related Technologies	2,408	154	6.4	0	0		0	0	
Technologies, Other	6,550	561	8.6	599	85	14.2	7	0	0.0
Foreign Languages	10,774	7,895	73.3	1,911	1,309	68.5	422	253	60.0
Baltic-Slavic	533	319	59.8	124	65	52.4	16	8	50.0
Germanic	1,478	957	64.7	279	188	67.4	68	40	58.8
Italic	7,428	5,712	76.9	1,118	812	221.0	221	151	68.3
Other Foreign Languages	1,335	907	67.9	390	244	62.6	117	54	46.2
Allied Health	12,572	10,019	79.7	3,275	2,490	76.0	54	25	46.3
Medical Lab Technologies	1,814	1,438	79.3	24	19	79.2	1	1	
Mental Health/Human Services	956	784	82.0	1,164	857	73.6	23	11	47.8
Rehabilitative Services	6,701	5,500	82.1	1,543	1,236	80.1	14	10	71.4
Allied Health, Other	3,101	2,297	74.1	544	378	69.5	16	3	18.8

TABLE 2-33 (continued)

BACHELORS, MASTERS AND DOCTORAL DEGREES CONFERRED BY SEX AND FIELD, 1988–89

Field of Study	Bachelors Degrees			Masters Degrees			Doctorate Degrees		
	Total	Women	% Wom	Total	Women	% Wom	Total	Women	% Wom
Health Sciences	46,539	40,166	86.3	15,980	12,555	78.6	1,385	802	57.9
Audiology & Speech Pathology	2,486	2,379	95.7	2,763	2,616	94.7	87	63	72.4
Health Services Administration	3,271	2,476	75.7	2,911	1,930	66.3	27	15	55.6
Medical Laboratory	757	612	80.8	86	55	64.0	1	1	100.0
Nursing	30,086	28,504	94.7	6,466	5,930	91.7	371	344	92.7
Pharmacy	5,486	3,248	59.2	251	107	42.6	178	64	36.0
Health Sciences, Other	4,453	2,947	66.2	3,503	1,917	54.7	721	315	43.7
Home Econ & Vocational Home Ec	14,717	13,337	90.6	2,174	1,863	85.7	263	204	77.6
Law	1,976	1,191	60.3	2,098	607	28.9	76	30	39.5
Letters	43,323	29,086	67.1	6,608	4,336	65.6	1,238	679	54.8
English, General	31,293	20,727	66.2	4,077	2,714	66.6	730	412	56.4
Linguistics	442	309	69.9	579	368	63.6	165	94	57.0
Literature, English	1,600	1,043	65.2	252	178	70.6	43	25	58.1
Speech, Debate & Forensic	7,878	4,989	557.0	379	403	107.0	51	32	62.7
Letters, Other	2,110	2,018	95.6	1,321	673	50.9	249	116	46.6
Liberal/General Studies	23,459	13,408	57.2	1,408	913	64.8	32	16	50.0
Library & Archival Scienca	122	108	88.9	3,940	3,124	79.3	61	34	55.7
Life Sciences	36,079	18,109	50.2	4,933	2,449	49.6	3,533	1,298	36.7
Biology, General	26,251	13,380	51.0	2,120	1,062	50.1	529	180	34.0
Biochemistry & Biophysics	1,976	875	44.3	223	101	45.3	555	201	36.2
Botany	239	124	51.9	333	169	50.8	251	93	37.1
Cell and Molecular Biology	693	297	42.9	91	35	38.5	208	74	35.6
Microbiology	1,755	921	52.5	369	204	55.3	351	130	37.0
Zoology	2,788	1,333	48.2	844	348	41.2	866	307	35.5
Life Sciences, Other	2,397	1,179	49.2	953	530	55.6	773	313	40.5
Mathematics	15,237	7,016	46.0	3,424	1,336	39.9	882	171	19.4
Military Science & Technology	419	41	9.8	0	0		0	0	
Multi-Interdisciplinary Studies	18,213	9,794	53.8	3,225	1,259	39.0	257	99	38.5
Parks & Recreation	4,171	2,462	59.0	460	247	53.7	36	8	22.2
Philosophy and Religion	6,411	2,289	35.7	1,274	519	40.7	464	123	26.5
Theology	5,322	1,214	22.8	4,625	1,622	35.1	1,165	143	12.3
Physical Sciences	17,141	5,077	29.6	5,684	1,518	26.7	3,847	758	19.7
Astronomy	113	25	22.1	80	13	16.3	53	11	20.8
Astrophysics	51	12	23.5	16	1	6.3	16	4	25.0
Atmospheric Sci & Meterology	330	52	15.8	206	32	15.5	67	7	10.4
Chemistry	8,654	3,342	38.6	1,785	664	37.2	2,034	516	25.4
Geology	2,109	539	25.6	1,171	316	27.0	271	54	19.9
Geological Science, Other	140	28	20.0	337	65	19.3	87	16	18.4
Oceanography	144	37	25.7	102	38	37.3	89	25	28.1
Earth Science	451	141	31.3	103	31	30.1	45	12	26.7
Physics	4,339	642	14.8	1,736	291	16.8	1,111	101	9.1
Physical Sciences, Other	810	259	32.0	148	67	45.3	74	12	16.2
Science Technologies	63	30	47.6	53	15	28.3	5	1	20.0
Psychology	48,516	34,335	70.8	8,579	5,780	67.4	3,263	1,834	56.2
Protective Services	14,626	5,552	38.0	1,046	324	31.0	27	8	29.6
Public Affairs	15,254	10,306	67.6	17,928	11,530	64.3	417	209	50.1
Social Sciences	107,714	47,790	44.4	10,854	4,381	40.2	2,878	939	32.6
Anthropology	3,066	1,934	63.1	704	419	59.5	318	152	47.8
Archeology	65	45	69.2	21	16	76.2	13	8	61.5
Criminology	1,080	480	44.4	57	20	35.1	2	1	50.0
Economics	23,502	7,631	32.5	1,870	532	28.4	834	159	19.1
Geography	3,013	897	29.8	548	179	32.7	121	27	22.3
History	20,096	7,624	37.9	2,110	824	39.1	480	170	35.4
International Relations	4,186	2,424	57.9	1,516	544	35.9	50	16	32.0
Politicaal Science & Govt	30,348	12,411	40.9	1,593	519	32.6	451	116	25.7
Sociology	14,329	9,866	68.9	1,143	649	56.8	450	229	50.9
Social Sciences, Other	8,027	4,478	55.8	1,292	659	51.0	159	61	38.4
Visual and Performing Arts	37,781	23,223	61.5	8,234	4,636	56.3	755	312	41.3
Design	4,713	2,768	58.7	341	185	54.3	0	0	
Dramatic Arts	4,612	2,677	58.0	1,070	555	51.9	61	22	36.1
Film Arts	1561	635	40.7	219	103	47.0	6	2	33.3
Fine Arts	16,172	10,950	67.7	2,762	1,743	63.1	162	112	69.1
Music	6,580	3,440	52.3	3,243	1,655	51.0	514	167	32.5
Visual & Performing Arts, Other	4,143	2,753	66.4	599	395	65.9	12	9	75.0

TABLE 2-34

BACHELORS, MASTERS AND DOCTORAL DEGREES CONFERRED BY SEX AND FIELD, 1987-88

Field of Study	Bachelors Degrees			Masters Degrees			Doctorate Degrees		
	Total	Women	% Wom	Total	Women	% Wom	Total	Women	% Wom
All Fields	**993,362**	**516,520**	**52.0**	**298,733**	**153,810**	**51.5**	**34,839**	**12,247**	**35.2**
Agribusiness & Ag Production	4,800	1,152	24.0	710	174	24.5	199	37	18.6
Agricultural Sciences	6,392	2,523	39.5	1,762	558	31.7	726	138	19.0
Ag Sciences, General	1,045	308	29.5	209	59	28.2	0	0	
Animal Sciences	3,034	1,417	46.7	529	164	31.0	190	33	17.4
Food Sciences	589	319	54.2	247	138	55.9	114	29	25.4
Plant Sciences	1,573	427	27.1	668	175	26.2	336	63	18.8
Soil Sciences	102	27	26.5	94	16	17.0	78	10	12.8
Ag Sciences Other	49	25	51.0	15	6	40.0	8	3	37.5
Renewable Natural Resources	3,030	803	26.5	1,007	320	31.8	217	41	18.9
Forestry Production & Sciences	1,181	221	18.7	468	138	29.5	136	23	16.9
Wildlife Management	580	169	29.1	108	34	31.5	14	1	7.1
Nat Resources Other	1,269	413	32.5	431	148	34.3	67	17	25.4
Architecture & Envt Design	8,606	3,329	38.7	3,159	1,117	35.4	98	32	32.7
Architecture	4,266	1,135	26.6	1,637	471	28.8	26	5	19.2
Arch & Envt Design Other	4,340	2,194	50.6	1,522	646	42.4	72	27	37.5
Area and Ethnic Studies	3,463	2,070	59.8	905	410	45.3	142	71	50.0
Business Management	235,476	108,085	45.9	69,430	23,246	33.5	1,108	255	23.0
Business Management, General	41,171	18,756	45.6	11,626	3,729	32.1	210	36	17.1
Accounting	42,886	22,572	52.6	3,101	1,360	43.9	57	22	38.6
Banking and Finance	26,100	9,118	34.9	5,258	1,555	29.6	43	7	16.3
Business Admin & Mgmt	68,544	30,879	45.0	37,609	12,235	32.5	541	124	22.9
Business Economics	3,444	1,139	33.1	175	55	31.4	36	8	22.2
Human Resources Development	1,355	701	51.7	810	396	48.9	10	5	50.0
Institutional Management	5,074	2,380	46.9	253	90	35.6	1	1	100.0
Labor/Industrial Relations	1,062	535	50.4	609	300	49.3	11	3	27.3
Management Info Systems	3,232	1,369	42.4	1,055	294	27.9	4	1	25.0
Management Sciences	2,277	975	42.8	634	163	25.7	58	5	8.9
Marketing Management & Research	30,173	15,280	50.6	1,940	940	48.5	47	15	31.9
Personnel Management	1,777	962	54.1	238	105	44.5	6	3	50.0
Business & Management, Other	8,381	3,419	40.8	6,124	2,024	33.1	86	25	29.1
Business & Office	2,948	2,234	75.8	51	24	47.1	0	0	
Marketing & Distribution	4,920	3,261	66.3	149	78	52.3	1	1	100.0
Communications	45,382	27,533	60.7	3,685	2,233	60.6	232	106	45.7
Advertising	2,757	1,792	65.0	222	133	59.9	1	1	100.0
Journalism	11,060	7,132	64.5	1,021	630	61.7	20	7	35.0
Public Relations	1,434	965	67.3	94	72	76.6	0	0	
Radio & TV	6,315	2,890	45.8	291	147	50.5	16	4	25.0
Communicatons, Other & General	23,816	14,754	61.9	2,057	1,251	60.8	195	94	48.2
Communications Technologies	1,323	584	44.1	247	125	50.6	4	2	50.0
Computer & Information Sciences	34,548	11,201	32.4	9,163	2,464	26.9	428	48	11.2
Comp & Info Sciences General	27,136	8,338	30.7	7,576	1,916	25.3	405	40	9.9
Computer Programming	308	58	18.8	120	26	21.7	0	0	
Data Processing	700	290	41.4	25	9	36.0	0	0	
Info Science & Systems	4,513	1,822	40.4	1,067	405	38.0	17	7	41.2
Comp & Info Sci, Other	1,891	693	36.6	378	108	28.6	6	1	16.7
Education	91,013	70,008	76.9	77,704	58,321	75.1	6,544	3,600	55.0
Education, General	2,113	1,706	80.7	7,739	5,717	73.9	949	532	56.1
Bilingual/Bicultural Education	308	189	61.4	387	250	64.6	55	25	45.5
Curriculum and Instruction	329	312	94.8	3,600	2,897	80.5	663	418	63.0
Education Administraton	9	9	100.0	9,585	5,583	58.2	1,865	912	48.9
Special Education	6,507	6,028	92.6	8,543	7,526	88.1	217	162	74.7
Student Counseling/Personnel Svcs	76	51	67.1	9,245	7,039	76.1	442	249	56.3
Teacher Ed, General	48,153	43,643	90.6	18,226	15,523	85.2	430	268	62.3
Elementary Education	39,440	36,615	92.8	11,028	10,115	91.7	97	74	76.3
Junior High/Middle School Ed	693	570	82.3	455	399	87.7	0	0	
Pre-elementary Educaton	4,069	3,987	98.0	1,514	1,467	96.9	24	21	87.5
Secondary Education	3,533	2,142	60.6	3,398	2,203	64.8	102	57	55.9
Teacher Ed General, Other	418	329	78.7	1,831	1,339	73.1	207	116	56.0

TABLE 2-34 (continued)

BACHELORS, MASTERS AND DOCTORAL DEGREES CONFERRED BY SEX AND FIELD, 1987-88

Field of Study	Bachelors Degrees			Masters Degrees			Doctorate Degrees		
	Total	Women	% Wom	Total	Women	% Wom	Total	Women	% Wom
Education (continued)									
Teacher Ed, Specific	32,454	17,324	53.4	14,948	9,829	65.8	835	425	50.9
Agricultural Education	575	130	22.6	292	62	21.2	21	1	4.8
Art Education	1,021	805	78.8	443	349	78.8	33	20	60.6
Business Education	1,930	1,528	79.2	542	447	82.5	24	8	33.3
English Education	1,462	1,159	79.3	453	329	72.6	33	22	66.7
Health Education	1,621	1,267	78.2	677	529	78.1	74	50	67.6
Home Economics Education	538	543	100.9	197	197	100.0	12	12	100.0
Industrial Arts Education	2,134	229	10.7	645	128	19.8	41	14	34.1
Mathematics Education	1,617	1,036	64.1	626	424	67.7	21	14	66.7
Music Education	2,904	1,700	58.5	858	487	56.8	64	24	37.5
Physical Education	12,214	5,821	47.7	3,477	1,737	50.0	210	93	44.3
Reading Education	189	175	92.6	3,135	2,964	94.5	55	47	85.5
Science Education	1,393	730	52.4	800	466	58.3	38	15	39.5
Social Science Education	690	361	52.3	138	92	66.7	2	1	50.0
Social Studies Education	1,280	533	41.6	180	81	45.0	6	2	33.3
Trade & Industrial Education	1,165	260	22.3	575	286	49.7	56	20	35.7
Teacher Ed Specific, Other	1,721	1,056	61.4	1,910	1,251	65.5	145	82	56.6
Education, Other	1,064	746	70.1	5,431	3,957	72.9	1,088	609	56.0
Engineering	69,505	10,647	15.3	22,693	2,806	12.4	4,181	293	7.0
Engineering, General	2,590	479	18.5	1,050	128	12.2	275	14	5.1
Aerospace Engineering	3,092	298	9.6	797	63	7.9	141	7	5.0
Agricultural Ingineering	460	37	8.0	185	18	9.7	60	3	5.0
Architectural Engineering	461	64	13.9	31	2	6.5	0	0	
Bioengineering	642	208	32.4	306	89	29.1	77	14	18.2
Ceramic Engineering	332	103	31.0	96	23	24.0	25	1	4.0
Chemical Engineering	3,926	1,058	26.9	1,103	197	17.9	579	53	9.2
Civil Engineering	7,497	1,064	14.2	2,839	326	11.5	481	26	5.4
Computer Engineering	2,115	316	14.9	760	100	13.2	77	6	7.8
Elec/Electronic, Comm. Eng	23,598	3,172	13.4	6,692	713	10.7	860	42	4.9
Engineering Machenics	286	33	11.5	182	16	8.8	81	4	4.9
Engineering Physics	340	38	11.2	54	4	7.4	24	0	0.0
Emgineering Scinece	306	66	21.6	268	23	8.6	42	13	31.0
Environ Health engineering	135	38	28.1	261	84	32.2	39	10	25.6
Geological & Geophysical Eng	222	57	25.7	85	12	14.1	7	1	14.3
Industrial Engineering	4,082	1,196	29.3	1,815	324	17.9	162	22	13.6
Materials Engineering	418	113	27.0	410	93	22.7	226	22	9.7
Mechanical Engineering	14,918	1,711	11.5	3 330	279	8.4	596	25	4.2
Metallurgical Engineeing	453	100	22.1	221	35	15.8	104	7	6.7
Mining & Mineral Engineering	227	28	12.3	82	1	1.2	11	0	0.0
Naval & Marine Engineering	383	18	4.7	41	1	2.4	4	0	0.0
Nuclear Engineering	296	32	10.8	212	16	7.5	97	3	3.1
Ocean Engineering	95	15	15.8	90	5	5.6	22	0	0.0
Petroleum Engineering	667	56	8.4	216	18	8.3	35	2	5.7
Survey & Mapping Sciences	81	10	12.3	28	4	14.3	7	0	0.0
Systems Engineering	308	68	22.1	242	51	21.1	24	5	20.8
Textile Engineering	21	9	42.9	20	8	40.0	2	0	0.0
Engineering, Other	1,554	260	16.7	1,277	173	13.5	123	13	10.6
Engineering & Related Technologies	19,286	1,537	8.0	733	117	16.0	10	0	0.0
Electrical & Electronic Tech	5,323	315	5.9	46	8	17.4	0	0	
Industrial Production Technology	4,884	498	10.2	180	30	16.7	6	0	0.0
Mechanical & Related Technologies	2,611	146	5.6	0	0		0	0	
Technologies, Other	6,468	578	8.9	507	79	15.6	4	0	0.0
Foreign Languages	10,028	7,301	72.8	1,847	1,258	68.1	411	231	56.2
Baltic-Slavic	537	331	61.6	117	68	58.1	15	8	53.3
Germanic	1,391	887	63.8	257	165	64.2	74	41	55.4
Italic	6,876	5,282	76.8	1,092	795	72.8	205	133	64.9
Other Foreign Languages	1,224	801	65.4	381	230	60.4	117	49	41.9
Allied Health	12,076	9,726	80.5	2,649	2,032	76.7	43	20	46.5
Medical Lab Technologies	1,944	1,547	79.6	38	27	71.1	0	0	
Mental Health/Human Services	938	792	84.4	869	645	74.2	19	9	47.4
Rehabilitative Services	6,270	5,160	82.3	1,365	1,110	81.3	16	8	50.0
Allied Health, Other	2,924	2,227	76.2	377	250	66.3	8	3	37.5

TABLE 2-34 (continued)

BACHELORS, MASTERS AND DOCTORAL DEGREES CONFERRED BY SEX AND FIELD, 1987-88

Field of Study	Bachelors Degrees			Masters Degrees			Doctorate Degrees		
	Total	Women	% Wom	Total	Women	% Wom	Total	Women	% Wom
Health Sciences	48,019	41,582	86.6	15,874	12,463	78.5	1,204	687	57.1
Audiology & Speech Pathology	2,485	2,379	95.7	2,810	2,656	94.5	82	52	63.4
Health Services Administration	3,242	2,609	80.5	2,873	1,835	63.9	33	18	54.5
Medical Laboratory	835	656	78.6	66	46	69.7	1	1	100.0
Nursing	31,569	29,945	94.9	6,400	5,928	92.6	283	256	90.5
Pharmacy	5,277	3,024	57.3	244	102	41.8	178	60	33.7
Health Sciences, Other	4,611	2,969	64.4	3,481	1,896	54.5	627	300	47.8
Home Econ & Vocational Home Ec	14,825	13,600	91.7	2,059	1,813	88.1	309	227	73.5
Law	1,303	890	68.3	1,880	494	26.3	89	23	25.8
Letters	39,503	26,351	66.7	6,171	4,061	65.8	1,180	648	54.9
English, General	27,739	18,840	67.9	3,877	2,592	66.9	695	391	56.3
Linguistics	475	346	72.8	527	327	62.0	138	66	47.8
Literature, English	1,296	880	67.9	189	123	65.1	65	42	64.6
Speech, Debate & Forensic	7,131	4,436	62.2	586	403	68.8	69	32	46.4
Letters, Other	2,862	1,849	64.6	992	616	62.1	213	117	54.9
Liberal/General Studies	21,796	12,298	56.4	1,342	831	61.9	31	15	48.4
Library & Archival Science	123	106	86.2	3,713	2,923	78.7	46	24	52.2
Life Sciences	36,761	18,500	50.3	4,769	2,352	49.3	3,598	1,268	35.2
Biology, General	26,802	13,630	50.9	1,977	968	49.0	582	219	37.6
Biochemistry & Biophysics	2,044	911	44.6	247	105	42.5	523	170	32.5
Botany	275	135	49.5	343	169	49.3	291	87	29.9
Cell and Molecular Biology	657	283	43.1	77	35	45.5	192	68	35.4
Microbiology	1,982	1,073	54.1	335	179	53.4	367	140	38.1
Zoology	2,780	1,329	47.8	814	337	41.4	888	303	34.1
Life Sciences, Other	2,223	1,139	51.2	976	559	57.3	755	281	37.2
Mathematics	15,888	7,375	46.4	3,423	1,371	40.1	752	126	16.8
Military Science & Technololgy	349	18	5.2	49	1	2.0	0	0	
Multi-Interdisciplinary Studies	17,366	9,173	52.8	3,097	1,298	41.9	261	94	36.0
Parks & Recreation	4,081	2,401	58.8	461	256	55.5	29	10	34.5
Philosophy and Religion	5,959	2,101	35.3	1,098	423	38.5	405	99	24.4
Theology	5,584	1,397	25.0	4,775	1,616	33.8	1,207	127	10.5
Physical Sciences	17,676	5,364	30.3	5,636	1,375	24.4	3,792	682	18.0
Astronomy	92	15	16.3	64	15	23.4	76	13	17.1
Astrophysics	33	4	12.1	21	2	9.5	20	2	10.0
Atmospheric Sci & Meterology	348	57	16.4	191	36	18.8	76	12	15.8
Chemistry	9,025	3,586	39.7	1,694	550	32.5	1,990	442	22.2
Geology	2,371	586	24.7	1,292	317	24.5	273	50	18.3
Geological Science, Other	181	36	19.9	238	62	26.1	77	13	16.9
Oceanography	145	27	18.6	99	30	30.3	85	20	23.5
Earth Science	508	140	27.6	100	42	42.0	27	4	14.8
Physics	4,097	609	14.9	1,676	253	15.1	1,093	111	10.2
Physical Sciences, Other	876	304	34.7	261	68	26.1	75	15	20.0
Science Technologies	100	37	37.0	91	37	40.7	12	3	25.0
Psychology	44,961	31,477	70.0	7,862	5,273	67.1	2,988	1,622	54.3
Protective Services	13,369	5,020	37.5	1,024	297	29.0	32	9	28.1
Public Affairs	14,232	9,699	68.1	17,150	10,826	63.1	470	232	49.4
Social Sciences	100,270	43,973	43.9	10,293	4,058	39.4	2,783	922	33.1
Anthropology	2,907	1,836	63.2	696	401	57.6	304	155	51.0
Archeology	88	60	68.2	45	26	57.8	20	7	35.0
Criminology	1,180	493	41.8	76	27	35.5	2	0	0.0
Economics	22,950	7,524	32.8	1,831	466	25.5	770	151	19.6
Geography	2,948	900	30.5	572	210	36.7	135	36	26.7
History	18,194	6,801	37.4	2,092	822	39.3	519	193	37.2
International Relations	4,225	2,328	55.1	1,213	406	33.5	63	13	20.6
Politicaal Science & Govt	27,200	10,911	40.1	1,577	522	33.1	391	86	22.0
Sociology	13,000	8,948	68.8	982	559	56.9	452	241	53.3
Social Sciences, Other	7,578	4,172	55.1	1,209	619	51.2	127	40	31.5
Visual and Performing Arts	36,600	22,494	61.5	7,925	4,488	56.6	728	301	41.3
Design	4,590	2,802	61.0	289	157	54.3	0	0	
Dramatic Arts	4,572	2,689	58.8	1,068	532	49.8	76	37	48.7
Film Arts	1363	555	40.7	202	84	41.6	1	1	100.0
Fine Arts	15,480	10,439	67.4	2,636	1,670	63.4	139	88	63.3
Music	6,703	3,444	51.4	3,192	1,673	52.4	502	167	33.3
Visual & Performing Arts, Other	3,892	2,565	65.9	538	372	69.1	10	8	80.0

SOURCE: U.S. Dept. of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred, 1988-80 Survey

TABLE 2-35

EARNED DEGREES CONFERRED BY LEVEL AND SEX, 1988–89

FIELD	Bachelors Degrees				Masters Degrees				Doctors Degrees			
	Total	Men	Women	%W	Total	Men	Women	%W	Total	Men	Women	%W
ALL FIELDS	1,017,667	483,097	534,570	52.5	309,762	148,982	160,780	51.9	35,759	22,705	13,054	36.5
Agriculture & Nat Resources	13,488	9,295	4,193	31.5	3,245	2,231	1,014	30.2	1,184	952	232	18.9
Architecture & Env. Design	9,191	5,580	3,611	38.7	3,378	2,191	1,187	35.4	86	63	23	32.7
Area & Ethnic Studies	3,949	1,613	2,336	59.8	978	497	481	45.3	110	57	53	50.0
Business & Management	246,659	131,419	115,240	46.7	73,154	48,557	24,597	33.5	1,150	844	306	23.1
Communications	48,625	19,263	29,362	60.2	4,233	1,710	2,523	60.0	248	137	111	45.8
Computer & Info Sciences	30,637	21,221	9,416	32.4	9,392	6,769	2,623	26.9	538	457	81	11.2
Education	96,988	21,662	75,326	76.9	82,238	20,286	61,952	75.1	6,783	2,894	3,889	55.0
Engineering, Eng Tech	85,273	73,651	11,622	13.7	24,541	21,355	3,186	12.5	4,533	4,133	400	7.0
Foreign Languages	10,774	2,879	7,895	72.8	1,911	602	1,309	68.1	422	169	253	56.2
Health & Allied Sciences	59,111	8,926	50,185	85.4	19,255	4,210	15,045	78.3	1,439	612	827	56.7
Home Economics	14,717	1,380	13,337	91.7	2,174	311	1,863	88.1	263	59	204	73.5
Law	1,976	785	1,191	68.3	2,098	1,491	607	28.3	76	46	30	25.8
Letters	43,323	14,237	29,086	66.7	6,608	2,272	4,336	65.8	1,238	559	679	54.9
Liberal/General Studies	23,459	10,051	13,408	56.4	1,408	495	913	61.9	32	16	16	48.4
Library & Archival Sciences	122	16	106	86.2	3,940	816	3,124	78.7	61	27	34	52.2
Life Sciences	36,079	17,970	18,109	50.3	4,933	2,484	2,449	49.3	3,533	2,235	1,298	35.2
Mathematics	15,237	8,221	7,016	46.4	2,058	2,058	1,366	40.1	711	711	171	16.8
Military Sciences	419	378	41	5.2	0	0	0		0	0	0	
Multi/Interdisciplinary	18,213	8,419	9,794	52.8	3,225	1,966	1,259	41.9	257	158	99	36.0
Parks & Recreation	4,171	1,709	2,462	58.8	460	213	247	55.5	36	28	8	34.5
Philosophy & Religion	6,411	4,122	2,289	35.3	1,274	755	519	38.5	464	341	123	24.4
Physical Sciences	17,204	12,097	5,107	30.4	5,737	4,204	1,533	24.7	3,852	3,093	759	18.0
Protective Services	14,626	9,074	5,552	37.5	1,046	722	324	29.0	27	19	8	28.1
Psychology	48,516	14,181	34,335	70.0	8,579	2,799	5,780	67.1	3,263	1,429	1,834	54.3
Public Affairs & Social Work	15,254	4,948	10,306	68.1	17,928	6,398	11,530	63.1	417	208	209	49.4
Social Sciences	107,714	59,924	47,790	43.9	10,854	6,493	4,361	39.4	2,878	1,939	939	33.5
Theology	5,322	4,108	1,214	25.0	4,625	3,003	1,622	33.8	1,165	1,022	143	10.5
Visual & Performing Arts	37,781	14,558	23,223	61.5	8,234	3,598	4,636	56.6	755	443	312	41.3
Not Classified	2,428	1,410	1,018	37.2	890	496	394	54.8	67	54	13	42.0

SOURCE: U.S. Dept. of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred, 1987-88 Survey

TABLE 2-36

EARNED DEGREES CONFERRED BY LEVEL AND SEX, 1987-88

FIELD	Bachelors Degrees				Masters Degrees				Doctors Degrees			
	Total	Men	Women	%W	Total	Men	Women	%W	Total	Men	Women	%W
ALL FIELDS	993,362	476,842	516,520	52.0	298,733	144,923	153,810	51.5	34,839	22,592	12,247	35.2
Agriculture & Nat Resources	14,222	9,744	4,478	31.5	3,479	2,427	1,052	30.2	1,142	926	216	18.9
Allied Health Sciences	60,095	8,787	51,308	85.4	18,523	4,028	14,495	78.3	1,247	540	707	56.7
Architecture & Env. Design	8,606	5,277	3,329	38.7	3,159	2,042	1,117	35.4	98	66	32	32.7
Area & Ethnic Studies	3,463	1,393	2,070	59.8	905	495	410	45.3	142	71	71	50.0
Business & Management	243,344	129,764	113,580	46.7	69,630	46,282	23,348	33.5	1,109	853	256	23.1
Communications	46,705	18,588	28,117	60.2	3,932	1,574	2,358	60.0	236	128	108	45.8
Computer & Info Sciences	34,548	23,347	11,201	32.4	9,166	6,702	2,464	26.9	428	380	48	11.2
Education	91,013	21,005	70,008	76.9	77,704	19,383	58,321	75.1	6,544	2,944	3,600	55.0
Engineering, Eng Tech	88,791	76,607	12,184	13.7	23,426	20,503	2,923	12.5	4,191	3,898	293	7.0
Foreign Languages	10,028	2,727	7,301	72.8	1,847	589	1,258	68.1	411	180	231	56.2
Home Economics	14,825	1,225	13,600	91.7	2,059	246	1,813	88.1	309	82	227	73.5
Law	1,303	413	890	68.3	1,880	1,386	494	26.3	89	66	23	25.8
Letters	39,503	13,152	26,351	66.7	6,171	2,110	4,061	65.8	1,180	532	648	54.9
Liberal/General Studies	21,796	9,498	12,298	56.4	1,342	511	831	61.9	31	16	15	48.4
Library & Archival Sciences	123	17	106	86.2	3,713	790	2,923	78.7	46	22	24	52.2
Life Sciences	36,761	18,261	18,500	50.3	4,769	2,417	2,352	49.3	3,598	2,330	1,268	35.2
Mathematics	15,888	8,513	7,375	46.4	3,423	2,052	1,371	40.1	752	626	126	16.8
Military Sciences	349	331	18	5.2	49	48	1	2.0	0	0	0	0.0
Multi/Interdisciplinary	17,366	8,193	9,173	52.8	3,097	1,799	1,298	41.9	261	167	94	36.0
Parks & Recreation	4,081	1,680	2,401	58.8	461	205	256	55.5	29	19	10	34.5
Philosophy & Religion	5,959	3,858	2,101	35.3	1,098	675	423	38.5	405	306	99	24.4
Physical Sciences	17,776	12,375	5,401	30.4	5,727	4,315	1,412	24.7	3,804	3,119	685	18.0
Protective Services	13,369	8,349	5,020	37.5	1,024	727	297	29.0	32	23	9	28.1
Psychology	44,961	13,484	31,477	70.0	7,862	2,589	5,273	67.1	2,988	1,366	1,622	54.3
Public Affairs & Social Work	14,232	4,533	9,699	68.1	17,150	6,324	10,826	63.1	470	238	232	49.4
Social Sciences	100,270	56,297	43,973	43.9	10,293	6,235	4,058	39.4	2,783	1,851	932	33.5
Theology	5,584	4,187	1,397	25.0	4,775	3,159	1,616	33.8	1,207	1,080	127	10.5
Visual & Performing Arts	36,600	14,106	22,494	61.5	7,925	3,437	4,488	56.6	728	427	301	41.3
Not Classified	1,801	1,131	670	37.2	4,144	1,873	2,271	54.8	579	336	243	42.0

SOURCE: U.S. Dept. of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred, 1986-87 Survey

TABLE 2-37

EARNED DEGREES CONFERRED BY LEVEL AND SEX, 1986–87

FIELD	Bachelor's Degrees				Master's Degrees				Doctor's Degrees			
	Total	Men	Women	%Wom	Total	Men	Women	%Wom	Total	Men	Women	%Wom
ALL FIELDS	991,339	480,854	510,485	51.5	289,557	141,363	148,194	51.2	34,120	22,099	12,021	35.2
Agriculture & Nat Resource	14,991	10,314	4,677	31.2	3,523	2,461	1,062	30.1	1,049	871	178	17.0
Architecture & Env. Design	8,922	5,590	3,332	37.3	3,142	2,073	1,069	34.0	92	66	26	28.3
Area & Ethnic Studies	3,340	1,278	2,062	61.7	851	452	399	46.9	132	73	59	44.7
Business & Management	241,156	128,958	112,198	46.5	67,496	45,211	22,285	33.0	1,098	839	259	23.6
Communications	45,408	18,155	27,253	60.0	3,937	1,606	2,331	59.2	275	158	117	42.5
Computer & Info Sciences	39,664	25,929	13,735	34.6	8,491	5,995	2,496	29.4	374	322	52	13.9
Education	87,115	20,770	66,345	76.2	75,501	19,642	55,859	74.0	6,909	3,117	3,792	54.9
Engineering, Eng Tech	93,074	80,347	12,727	13.7	22,693	19,841	2,852	12.6	3,820	3,557	263	6.9
Foreign Languages	10,184	2,791	7,393	72.6	1,746	517	1,229	70.4	441	184	257	58.3
Health Sciences	63,206	9,177	54,029	85.5	18,426	3,887	14,539	78.9	1,213	564	649	53.5
Home Economics	14,942	1,116	13,826	92.5	2,070	256	1,814	87.6	297	65	232	78.1
Law	1,178	370	808	68.6	1,943	1,423	520	26.8	120	79	41	34.2
Letters	37,133	12,684	24,449	65.8	6,123	2,140	3,983	65.0	1,181	515	666	56.4
Liberal/General Studies	21,365	9,312	12,053	56.4	1,126	459	667	59.2	29	15	14	48.3
Library/Archival Sciences	139	20	119	85.6	3,815	796	3,019	79.1	57	18	39	68.4
Life Sciences	38,114	19,641	18,473	48.5	4,954	2,539	2,415	48.7	3,423	2,226	1,197	35.0
Mathematics	16,489	8,834	7,655	46.4	3,321	2,024	1,297	39.1	725	599	126	17.4
Military Sciences	383	357	26	6.8	83	81	2	2.4	0	0	0	0.0
Multi/Interdiciplinary	16,402	7,597	8,805	53.7	3,041	1,764	1,277	42.0	276	174	102	37.0
Parks & Recreation	4,107	1,636	2,471	60.2	476	213	263	55.3	32	20	12	37.5
Philosophy & Religion	5,976	3,840	2,136	35.7	1,108	698	410	37.0	422	329	93	22.0
Physical Sciences	19,974	14,302	5,672	28.4	5,652	4,243	1,409	24.9	3,672	3,038	634	17.3
Protective Services	12,930	7,974	4,956	38.3	1,019	719	300	29.4	18	15	3	16.7
Psychology	42,868	13,332	29,536	68.9	8,204	2,856	5,348	65.2	3,123	1,458	1,665	53.3
Public Affairs	14,161	4,537	9,624	68.0	17,032	6,191	10,841	63.7	398	216	182	45.7
Social Sciences	96,185	53,879	42,306	44.0	10,397	6,294	4,103	39.5	2,916	2,026	890	30.5
Theology	5,710	4,331	1,379	24.2	4,881	3,225	1,656	33.9	1,236	1,108	128	10.4
Visual & Performing Arts	36,223	13,783	22,440	61.9	8,506	3,757	4,749	55.8	792	447	345	43.6

Source: Degrees and Other Formal Awards Conferred, 1988–89 Survey, National Center for Education Statistics

TABLE 2-38
DOCTORATE DEGREES AWARDED BY FIELD, SEX & RACE/ETHNICITY 1988–89

FIELD	TOTAL	Women	Men	%W	White			Black			Hispanic			Asian			Indian			Foreign		
					Wom	Men	%W	Wom	Men	%W	Wom	Men	%W	Wom	Men	%W	Wom	Men	%W	Wom	Men	%W
ALL FIELDS	35692	13041	22651	36.5	10327	14568	69.7	574	497	3.0	273	352	1.8	383	954	3.7	35	49	0.2	1449	6231	21.5
Agriculture & Nat Resources	1184	232	952	19.6	158	519	57.2	3	12	1.3	3	17	1.7	8	22	2.5	0	0	0.0	60	382	37.3
Architecture & Env. Design	86	23	63	26.7	9	25	39.5	2	0	2.3	1	1	2.3	2	4	7.0	0	1	1.2	9	32	47.7
Area & Ethnic Studies	110	53	57	48.2	43	39	74.5	1	1	1.8	1	3	3.6	2	0	1.8	1	0	0.9	5	14	17.3
Business & Management	1150	306	844	26.6	255	491	64.9	3	17	1.7	2	12	1.2	5	52	5.0	0	2	0.2	41	270	27.0
Communications	248	111	137	44.8	80	97	71.4	14	2	6.5	2	2	1.6	1	1	0.8	0	0	0.0	14	35	19.8
Computer & Info Sciences	538	81	457	15.1	52	233	53.0	2	0	0.4	3	1	0.7	5	37	7.8	0	0	0.0	19	186	38.1
Education	6783	3889	2894	57.3	3190	2255	80.3	276	174	6.6	94	68	2.4	70	58	1.9	14	11	0.4	245	328	8.4
Engineering	4521	400	4121	8.8	260	1679	42.9	3	27	0.7	6	37	1.0	26	300	7.2	0	3	0.1	105	2075	48.2
Engineering Technologies	12	0	12	0.0	0	8	66.7	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	4	33.3
Foreign Languages	422	253	169	60.0	175	107	66.8	9	5	3.3	22	10	7.6	4	3	1.7	0	0	0.0	43	44	20.6
Health Professions	1439	827	612	57.5	683	424	76.9	28	11	2.7	10	5	1.0	18	29	3.3	1	1	0.1	87	142	15.9
Home Economics	263	204	59	77.6	157	50	78.7	12	0	4.6	2	0	0.8	4	2	2.3	0	0	0.0	29	7	13.7
Law	76	30	46	39.5	11	13	31.6	4	0	5.3	0	0	0.0	0	2	2.6	0	0	0.0	15	31	60.5
Letters	1238	679	559	54.8	551	449	80.8	22	7	2.3	15	9	1.9	14	10	1.9	0	3	0.2	77	81	12.8
Liberal/General Studies	32	16	16	50.0	10	15	78.1	5	1	18.8	0	0	0.0	0	0	0.0	0	0	0.0	1	0	3.1
Library/Archival Sciences	61	34	27	55.7	27	15	68.9	0	1	1.6	0	0	0.0	2	1	4.9	0	0	0.0	5	10	24.6
Life Sciences	3533	1298	2235	36.7	999	1678	75.8	23	35	1.6	11	36	1.3	79	95	4.9	4	6	0.3	182	385	16.0
Mathematics	882	171	711	19.4	92	321	46.8	3	5	0.9	2	5	0.8	9	24	3.7	1	0	0.1	64	356	47.6
Multi/Interdiciplinary	257	99	158	38.5	86	121	80.5	2	3	1.9	2	3	1.9	1	4	1.9	1	0	0.4	7	27	13.2
Parks & Recreation	36	8	28	22.2	4	20	66.7	2	0	5.6	0	0	0.0	0	0	0.0	0	0	0.0	2	8	27.8
Philosophy & Religion	464	123	341	26.5	106	271	81.3	2	7	1.9	2	7	1.9	1	11	2.6	0	0	0.0	12	45	12.3
Physical Sciences	3852	759	3093	19.7	510	1926	63.2	6	26	0.8	11	43	1.4	36	149	4.8	4	9	0.3	192	940	29.4
Protective Services	27	8	19	29.6	6	18	88.9	2	1	11.1	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Psychology	3263	1834	1429	56.2	1613	1263	88.1	73	40	3.5	52	37	2.7	35	26	1.9	5	3	0.2	56	60	3.6
Public Affairs	417	209	208	50.1	167	130	71.2	19	17	8.6	6	4	2.4	8	8	3.8	1	0	0.2	8	49	13.7
Social Sciences	2878	939	1939	32.6	702	1172	65.1	46	62	3.8	24	36	2.1	33	68	3.5	2	8	0.3	132	593	25.2
Theology	1165	143	1022	12.3	121	863	84.5	9	35	3.8	0	10	0.9	3	32	3.0	0	2	0.2	10	80	7.7
Visual & Performing Arts	755	312	443	41.3	260	366	82.9	3	8	1.5	2	6	1.1	17	16	4.4	1	0	0.1	29	47	10.1

Note: This tabulation excludes 54 men and 13 women whose racial/ethnic group could not be inputed. Because of imputation methods, field of study totals by race/ethnicity may differ slightly from field of study totals by sex of student.

Source: Degrees and Other Formal Awards Conferred, 1988–89 Survey, National Center for Education Statistics

TABLE 2-39

MASTERS DEGREES AWARDED BY FIELD, SEX & RACE/ETHNICITY 1988–89

FIELD	TOTAL	Women	Men	%W	White			Black			Hispanic			Asian			Indian			Foreign		
					Wom	Men	%W	Wom	Men	%B	Wom	Men	%H	Wom	Men	%A	Wom	Men	%I	Wom	Men	%F
ALL FIELDS	308872	160386	148486	51.9	132423	109184	78.2	8876	5200	4.6	3910	3360	2.4	4467	6247	3.5	633	500	0.4	10077	23995	11.0
Agriculture & Nat Resources	3245	1014	2231	31.2	758	1464	68.5	12	41	1.6	17	39	1.7	22	31	1.6	0	6	0.2	205	650	26.3
Architecture & Env. Design	3378	1187	2191	35.1	889	1461	69.6	44	54	2.9	22	68	2.7	45	73	3.5	6	3	0.3	181	532	21.1
Area & Ethnic Studies	978	481	497	49.2	309	358	68.2	14	16	3.1	36	21	5.8	24	24	4.9	2	5	0.7	96	73	17.3
Business & Management	73154	24597	48557	33.6	19432	38013	78.5	1331	1746	4.2	599	982	2.2	1076	1886	4.0	72	125	0.3	2087	5805	10.8
Communications	4233	2523	1710	59.6	1999	1329	78.6	133	82	5.1	46	24	1.7	52	47	2.3	11	3	0.3	282	225	12.0
Computer & Info Sciences	9392	2623	6769	27.9	1481	3809	56.3	86	132	2.3	45	107	5.0	359	628	10.5	3	40	0.5	649	2053	28.8
Education	82238	61952	20286	75.3	53781	17046	86.1	4167	1105	6.4	1566	591	2.6	786	278	1.3	265	121	0.5	1387	1145	3.1
Engineering	23713	3080	20633	13.0	2037	11538	57.2	97	278	1.6	76	396	2.0	305	1803	8.9	4	31	0.1	561	6587	30.1
Engineering Technologies	828	106	722	12.8	83	548	76.2	12	37	5.9	2	8	1.2	2	36	4.6	1	1	0.2	6	92	11.8
Foreign Languages	1911	1309	602	68.5	872	390	66.5	13	8	1.1	107	51	8.3	36	10	2.4	2	1	0.2	279	133	21.6
Health Professions	19255	15045	4210	78.1	13032	3203	84.3	675	179	4.4	296	102	2.1	395	168	2.9	64	21	0.4	583	537	5.8
Home Economics	2174	1863	311	85.7	1580	240	83.7	55	12	3.1	33	12	2.1	49	5	2.5	9	1	0.5	137	41	8.2
Law	2098	607	1491	28.9	299	751	50.0	30	43	3.5	12	29	2.0	21	41	3.0	3	1	0.2	242	626	41.4
Letters	6608	4336	2272	65.6	3606	1863	82.8	95	30	1.9	85	40	1.9	136	51	2.8	16	8	0.4	398	280	10.3
Liberal/General Studies	1408	913	495	64.8	825	423	88.6	18	13	2.2	30	9	2.8	12	12	1.7	4	2	0.4	24	36	4.3
Library/Archival Sciences	3940	3124	816	79.3	2736	708	87.4	104	25	3.3	50	11	1.5	84	29	2.9	15	4	0.5	135	39	4.4
Life Sciences	4933	2449	2484	49.6	1909	1882	76.8	67	61	2.6	54	59	2.3	122	108	4.7	9	8	0.3	288	366	13.3
Mathematics	3424	1366	2058	39.9	903	1220	62.0	28	33	1.8	9	20	0.8	64	122	5.4	1	5	0.2	361	658	29.8
Military Science	0	0	0		0	0		0	0		0	0		0	0		0	0		0	0	
Multi/Interdiciplinary	3225	1259	1966	39.0	1085	1656	85.0	56	69	3.9	31	45	2.4	27	72	3.1	2	5	0.2	58	119	5.5
Parks & Recreation	460	247	213	53.7	218	158	81.7	10	14	5.2	1	4	1.1	4	11	3.3	1	0	0.2	13	26	8.5
Philosophy & Religion	1274	519	755	40.7	456	598	82.7	8	43	4.0	11	21	2.5	14	22	2.8	2	0	0.2	28	71	7.8
Physical Sciences	5737	1533	4204	26.7	1074	2888	69.1	23	59	1.4	24	53	1.3	105	187	5.1	6	12	0.3	301	1005	22.8
Protective Services	1046	324	722	31.0	253	573	79.0	58	80	13.2	4	11	1.4	5	7	1.1	0	1	0.1	4	50	5.2
Psychology	8579	5780	2799	67.4	5018	2402	86.5	288	126	4.8	193	108	3.5	91	46	1.6	22	13	0.4	168	104	3.2
Public Affairs	17928	11530	6398	64.3	9466	4871	80.0	1118	508	9.1	359	235	3.3	249	168	2.3	67	33	0.6	271	583	4.8
Social Sciences	10854	4361	6493	40.2	3221	4457	70.7	197	200	3.7	99	148	2.3	137	192	3.0	22	31	0.5	685	1465	19.8
Theology	4625	1622	3003	35.1	1391	2376	81.4	43	103	3.2	25	74	2.1	41	107	3.2	5	4	0.2	117	339	9.9
Visual & Performing Arts	8234	4636	3598	56.3	3710	2950	80.9	94	103	2.4	78	92	2.1	204	83	3.5	19	15	0.4	531	355	10.8

Note: This tabulation excludes 496 men and 394 women whose racial/ethnic group could not be imputed. Because of imputation methods, field of study totals by race/ethnicity may differ slightly from field of study totals by sex of student.

Source: Degrees and Other Formal Awards Conferred, 1988–89 Survey, National Center for Education Statistics

TABLE 2-40
BACHELOR'S DEGREES AWARDED BY FIELD, SEX & RACE/ETHNICITY 1988–89

FIELD	TOTAL	Women	Men	%W	White			Black			Hispanic			Asian			Indian			Foreign		
					Women	Men	%W	Wom	Men	%B	Wom	Men	%H	Wom	Men	%A	Wom	Men	%I	Wom	Men	%F
ALL FIELDS	1015239	533552	481687	52.6	451530	406656	84.5	35651	22365	5.7	15880	13920	2.9	18682	19537	3.8	2278	1768	0.4	9531	17441	2.7
Agriculture & Nat Resources	13488	4193	9295	31.1	3754	8494	90.8	137	174	2.3	64	158	1.6	126	114	1.8	25	45	0.5	87	310	2.9
Architecture & Env. Design	9191	3611	5580	39.3	2973	4448	80.7	94	187	3.1	126	233	3.9	205	225	4.7	11	28	0.4	202	459	7.2
Area & Ethnic Studies	3949	2336	1613	59.2	1818	1237	77.4	138	99	6.0	110	61	4.3	191	142	8.4	18	7	0.6	61	67	3.2
Business & Management	246659	115240	131419	46.7	94886	112938	84.3	9037	6051	6.1	3504	3483	2.8	4370	3669	3.3	465	359	0.3	2978	4919	3.2
Communications	48625	29362	19263	60.4	25552	16920	87.3	2051	1151	6.6	708	461	2.4	609	383	2.0	77	60	0.3	365	288	1.3
Computer & Info Sciences	30637	9416	21221	30.7	6201	16314	73.5	1313	1244	8.3	331	571	2.9	889	1468	7.7	34	60	0.3	648	1566	7.2
Education	96988	75326	21662	77.7	68949	19203	90.9	3084	1149	4.4	1713	580	2.4	854	273	1.2	367	170	0.6	359	287	0.7
Engineering	66296	10062	56234	15.2	7381	43402	76.6	677	1417	3.2	339	1598	2.9	1151	5008	9.3	36	143	0.3	478	4666	7.8
Engineering Technologies	18977	1560	17417	8.2	1171	14555	82.9	209	934	6.0	56	465	2.7	91	762	4.5	10	96	0.6	23	605	3.3
Foreign Languages	10774	7895	2879	73.3	6441	2337	81.5	256	63	3.0	701	263	8.9	259	144	3.7	30	6	0.3	208	66	2.5
Health Professions	59111	50185	8926	84.9	43498	7513	86.3	3511	462	6.7	1121	265	2.3	1326	407	2.9	197	48	0.4	532	231	1.3
Home Economics	14717	13337	1380	90.6	11673	1173	87.3	788	106	6.1	252	32	1.9	429	33	3.1	46	5	0.3	149	31	1.2
Law	1976	1191	785	60.3	1057	668	87.3	81	46	6.4	20	37	2.9	28	26	2.7	1	4	0.3	4	4	0.4
Letters	43323	29086	14237	67.1	25963	12935	89.8	1358	504	4.3	665	304	2.2	734	314	2.4	108	50	0.4	258	130	0.9
Liberal/General Studies	23459	13408	10051	57.2	11107	8592	84.0	1000	721	7.3	696	368	4.5	353	191	2.3	103	54	0.7	149	125	1.2
Library/Archival Sciences	122	106	16	86.9	93	12	86.1	7	1	6.6	2	0	1.6	2	1	2.5	0	0	0.0	2	2	3.3
Life Sciences	36079	18109	17970	50.2	14262	14634	80.1	1234	710	5.4	599	655	3.5	1484	1467	8.2	77	70	0.4	453	434	2.5
Mathematics	15237	7016	8221	46.0	5763	6724	82.0	421	380	5.3	121	189	2.0	497	537	6.8	15	39	0.4	199	352	3.6
Military Science	419	41	378	9.8	31	325	85.0	6	31	8.8	4	8	2.9	0	4	1.0	0	0	0.0	0	10	2.4
Multi/Interdiciplinary	18213	9794	8419	53.8	8272	7182	84.9	641	456	6.0	299	240	3.0	394	301	3.8	38	41	0.4	150	199	1.9
Parks & Recreation	4171	2462	1709	59.0	2269	1499	90.3	87	110	4.7	46	44	2.2	30	28	1.4	16	7	0.6	14	21	0.8
Philosophy & Religion	6411	2289	4122	35.7	2036	3677	89.1	88	136	3.5	60	100	2.5	63	111	2.7	8	17	0.4	34	81	1.8
Physical Sciences	17204	5107	12097	29.7	4143	10359	84.3	337	371	4.1	109	275	2.2	300	636	5.4	18	45	0.4	200	411	3.6
Protective Services	14626	5552	9074	38.0	4075	7426	78.6	1075	1031	14.4	287	399	4.7	52	130	1.2	38	36	0.5	25	52	0.5
Psychology	48516	34335	14181	70.8	29355	12229	85.7	2154	661	5.8	1232	541	3.7	1091	514	3.3	153	61	0.4	350	175	1.1
Public Affairs	15254	10306	4948	67.6	8034	4019	79.0	1488	486	12.9	413	200	4.0	166	121	1.9	97	36	0.9	108	86	1.3
Social Sciences	107714	47790	59924	44.4	39272	51657	84.4	3624	2874	6.0	1742	1876	3.4	2030	1962	3.7	211	220	0.4	911	1335	2.1
Theology	5322	1214	4108	22.8	1105	3674	89.8	23	162	3.5	27	69	1.8	27	94	2.3	4	8	0.2	28	101	2.4
Visual & Performing Arts	37781	23223	14558	61.5	20396	12510	87.1	732	648	3.7	533	445	2.6	931	474	3.7	75	53	0.3	556	428	2.6

Note: This tabulation excludes 1410 men and 1018 women whose racial/ethnic group could not be imputed. Because of imputation methods, field of study totals by race/ethnicity may differ slightly from field of study totals by sex of student.

Source: Degrees and Other Formal Awards Conferred, 1984–85 Survey, Office of Civil Rights and 1986–87 and 1987–89 surveys, National Center for Education Statistics

TABLE 2-41

PERCENT WOMEN AMONG S/E DOCTORATE GRADUATES BY RACE/ETHNICITY, 1985 - 1989

FIELD	All Women			White			Black			Hispanic			Indian*			Asian			All Min			Foreign		
	'85	'87	'89	'85	'87	'89	'85	'87	'89	'85	'87	'89	'85	'87	'89	'85	'87	'89	'85	'87	'89	'85	'87	'89
Agriculture & Nat Resources	14.0	16.9	19.6	16.7	19.1	23.3	10.0	27.8	20.0	8.3	20.0	15.0				13.5	12.5	26.7	11.7	17.9	21.5	8.4	12.4	13.6
Computer & Info Sciences	10.1	13.9	15.1	12.1	18.7	18.2										7.7	20.0	11.9	5.3	20.7	20.8	5.9	4.0	9.3
Engineering	6.4	6.9	8.8	7.9	10.2	13.4	14.7	10.3	10.0			14.0				7.6	7.0	8.0	7.0	6.7	8.7	4.6	3.8	4.8
Life Sciences	32.7	34.9	36.7	32.1	35.1	37.3	38.5	43.4	39.7	43.1	39.0	23.4				37.3	44.3	45.4	39.3	42.5	40.5	29.2	30.4	32.1
Mathematics	15.6	17.3	19.4	19.2	18.3	22.3										14.3	35.1	27.3	17.5	28.6	30.6	9.9	14.2	15.2
Physical Sciences	16.3	17.2	19.7	16.4	18.7	20.9	25.9	15.4	18.8	13.9	28.3	20.4			30.8	25.8	22.3	19.5	24.0	22.7	20.1	13.5	12.2	17.0
SUBTOTAL NATURAL S&E	18.1	18.7	20.3	20.8	22.3	24.6	24.8	27.0	27.6	18.8	22.6	20.6	30.8	6.7	33.3	19.1	21.5	20.6	19.9	22.2	21.8	10.5	10.8	12.6
Psychology	48.8	53.3	56.2	48.9	52.7	56.1	55.0	63.9	64.6	52.2	67.6	58.4	33.3	62.5	62.5	51.2	56.9	57.4	53.1	63.4	60.9	37.1	45.8	48.3
Social Services	32.2	30.5	32.6	35.8	35.3	37.5	40.6	40.0	42.6	30.2	26.5	40.0				32.8	23.4	32.7	36.2	31.1	37.6	17.1	14.5	18.2
SUBTOTAL	40.6	42.2	45.2	43.1	45.2	48.7	48.0	52.1	53.8	39.4	47.5	51.0				40.6	36.7	42.0	44.1	47.0	49.1	19.9	18.7	22.4
TOTAL S&E	25.5	26.1	27.7	29.0	30.9	33.3	38.6	41.6	43.4	25.7	32.3	34.6	40.0	37.1	35.6	22.1	23.9	24.3	27.1	30.1	30.7	12.2	12.0	14.0
ALL FIELDS	34.1	35.2	36.5	37.4	39.4	41.5	51.8	54.0	53.6	36.3	41.5	43.7	51.8	44.2	41.7	27.1	27.5	28.6	39.3	40.9	40.6	16.6	17.0	18.9

* Percentages not considered signifigant nore presented when total men and women was less than 10.

SOURCE: Susan T. Hill, *The Traditionally Black Institutions of Higher Education 1886-1962;* Surveys of Degrees Conferred, National Center for Education Statistics. Tabulations by the American Council on Education Division of Policy Analysis and Research

TABLE 2-42

DEGREES CONFERRED BY HISTORICALLY BLACK COLLEGES AND UNIVERSITIES, SELECTED FIELDS, 1982, 1985, 1987

TOTAL	Bachelor's			Percent Change	Master's			Percent Change	Doctorate			Percent Change
	1982	1985	1987	1985–87	1982	1985	1987	1985–87	1982	1985	1987	1985–87
Business and Management	5,692	6,518	5,737	–12.0	577	594	586	–1.3	0	0	0	n.a.
Education	3,852	2,832	2,421	–14.5	2,456	2,178	1,935	–11.2	22	73	91	24.7
Social Sciences	2,433	1,803	1,666	–7.6	133	103	107	3.9	19	23	26	13.0
Engineering and Engineering Technologies	1,646	1,558	1,553	–0.3	73	110	110	0.0	1	2	1	0.0
Public Affairs and Services	1,470	1,312	1,269	–3.2	419	369	406	10.0	12	4	9	125.0
Health Sciences	847	795	885	11.3	60	53	95	79.2	0	0	0	n.a.

NOTES: (a) 1987 data show degrees granted from a total of 97 HBCUs compared to 100 in 1985. Three institutions were not included in 1987 because they had either closed, merged with another institution, or were no longer acccredited by an agency recognized by the U.S. Department of Education.

Source: Degrees and Other Formal Awards Conferred, 1988–89 Survey, National Center for Education Statistics

TABLE 2-43

SCIENCE AND ENGINEERING DEGREES BY DEGREE LEVEL, FIELD SEX & RACE/ETHNICITY, 1988–89

FIELD	TOTAL(1)	Women	Men	%W	White			Black			Hispanic			Asian			Indian			Foreign		
					Women	Men	%Wh	Women	Men	%B	Women	Men	%H	Women	Men	%A	Women	Men	%I	Women	Men	%F
								BACHELORS														
Agriculture & Nat Resources	13,488	4,193	9,295	31.1	3,754	8,494	90.8	137	174	2.3	64	158	1.6	126	114	1.8	25	45	0.5	87	310	2.9
Computer & Info Sciences	30,637	9,416	21,221	30.7	6,201	16,314	73.5	1,313	1,244	8.3	331	571	2.9	889	1,466	7.7	34	60	0.3	648	1,566	7.2
Engineering	66,296	10,062	56,234	15.2	7,381	43,402	76.6	677	1,417	3.2	339	1,598	2.9	1,151	5,006	9.3	36	143	0.3	478	4,666	7.8
Life Sciences	36,079	18,109	17,970	50.2	14,262	14,634	80.1	1,234	710	5.4	599	655	3.5	1,484	1,467	8.2	77	70	0.4	453	434	2.5
Mathematics	15,237	7,016	8,221	46.0	5,763	6,724	82.0	421	380	5.3	121	189	2.0	497	537	6.8	16	39	0.4	199	352	3.6
Physical Sciences	17,204	5,107	12,097	29.7	4,143	10,359	84.3	337	371	4.1	109	275	2.2	300	636	5.4	18	45	0.4	200	411	3.6
SUBTOTAL NATURAL S&E	178,941	53,903	125,038	30.1	41,504	99,927	79.0	4,119	4,296	4.7	1,563	3,446	2.8	4,447	9,228	7.6	205	402	0.3	2,065	7,739	5.5
Psychology	48,516	34,335	14,181	70.8	29,355	12,229	85.7	2,154	661	5.8	1,232	541	3.7	1,091	514	3.3	153	61	0.4	350	175	1.1
Social Services	107,714	47,790	59,924	44.4	39,272	51,657	84.4	3,624	2,874	6.0	1,742	1,876	3.4	2,030	1,962	3.7	211	220	0.4	911	1,336	2.1
SUBTOTAL	156,230	82,125	74,105	52.6	68,627	63,886	84.8	5,778	3,535	6.0	2,974	2,417	3.5	3,121	2,476	3.6	364	281	0.4	1,261	1,510	1.8
TOTAL SCIENCE & ENGINEERIN	335,171	136,028	199,143	40.6	110,131	163,813	81.7	9,897	7,831	5.3	4,537	5,863	3.1	7,568	11,704	5.7	569	683	0.4	3,326	9,249	3.6
ALL FIELDS	1,015,239	533,552	481,687	52.6	451,530	406,656	84.5	35,651	22,365	5.7	15,880	13,920	2.9	18,662	19,537	3.8	2,278	1,766	0.4	9,531	17,441	2.7
								MASTERS														
Agriculture & Nat Resources	3245	1014	2231	31.2	758	1484	68.5	12	41	1.6	17	39	1.7	22	31	1.6	0	6	0.2	205	650	26.3
Computer & Info Sciences	9392	2623	6769	27.9	1451	3809	56.3	86	132	2.3	45	107	1.6	359	626	10.5	3	40	0.5	649	2053	28.6
Engineering	23713	3080	20633	13.0	2037	11538	57.2	97	278	1.6	76	396	2.0	305	1803	8.9	4	31	0.1	561	6587	30.1
Life Sciences	4933	2449	2484	49.6	1909	1882	76.8	67	61	2.6	54	59	2.3	122	108	4.7	9	8	0.3	288	386	13.3
Mathematics	3424	1366	2058	39.9	903	1220	62.0	26	33	1.8	9	20	0.8	64	122	5.4	1	5	0.2	361	658	29.8
Physical Sciences	5737	1533	4204	26.7	1074	2888	69.1	23	59	1.4	24	53	1.3	105	187	5.1	6	12	0.3	301	1005	22.8
SUBTOTAL NATURAL S&E	50444	12065	38379	23.9	8162	22801	61.4	313	604	1.8	225	674	1.8	977	2879	7.6	23	102	0.2	2365	11319	27.1
Psychology	8579	5780	2799	67.4	5018	2402	86.5	268	126	4.8	193	108	3.5	91	46	1.6	22	13	0.4	168	104	3.2
Social Services	10854	4361	6493	40.2	3221	4457	70.7	197	200	3.7	99	148	2.3	137	192	3.0	22	31	0.5	685	1485	19.8
SUBTOTAL	19433	10141	9292	52.2	8239	6859	77.7	485	326	4.2	292	256	2.8	228	238	2.4	44	44	0.5	853	1589	12.5
TOTAL SCIENCE & ENGINEERIN	69877	22206	47671	31.8	16401	29660	65.9	798	930	2.5	517	930	2.1	1205	3117	6.2	67	146	0.3	3218	12888	23.0
ALL FIELDS	308,872	160386	148486	51.9	123297	105573	74.1	8716	5151	4.5	3714	3330	2.3	3320	5238	2.8	587	517	0.4	8443	21455	9.7
								DOCTORATES														
Agriculture & Nat Resources	1184	232	952	19.6	158	519	57.2	3	12	1.3	3	17	1.7	8	22	2.5	0	0	0.0	60	382	37.3
Computer & Info Sciences	538	81	457	15.1	52	233	53.0	2	0	0.4	3	1	0.7	5	37	7.8	0	0	0.0	19	186	38.1
Engineering	4521	400	4121	8.8	260	1679	42.9	3	27	0.7	6	37	1.0	26	300	7.2	0	3	0.1	105	2075	48.2
Life Sciences	3533	1296	2235	36.7	999	1678	75.8	23	35	1.6	11	36	1.3	79	95	4.9	4	6	0.3	182	385	16.0
Mathematics	882	171	711	19.4	92	321	46.8	3	5	0.9	2	5	0.8	9	24	3.7	1	0	0.1	64	356	47.6
Physical Sciences	3852	759	3093	19.7	510	1926	63.2	6	26	0.8	11	43	1.4	36	149	4.8	4	9	0.3	192	940	29.4
SUBTOTAL NATURAL S&E	14510	2941	11569	20.3	2071	6356	58.1	40	105	1.0	36	139	1.2	163	627	5.4	9	18	0.2	622	4324	34.1
Psychology	3263	1834	1429	56.2	1613	1263	88.1	73	40	3.5	52	37	2.7	35	26	1.9	5	3	0.2	56	60	3.6
Social Services	2878	939	1939	32.6	702	1172	65.1	46	62	3.8	24	36	2.1	33	66	3.5	2	8	0.3	132	593	25.2
SUBTOTAL	6141	2773	3368	45.2	2315	2435	77.3	119	102	3.6	76	73	2.4	68	94	2.6	7	11	0.3	188	653	13.7
TOTAL SCIENCE & ENGINEERIN	20651	5714	14937	27.7	4386	8791	63.8	159	207	1.8	112	212	1.6	231	721	4.6	16	29	0.2	810	4977	28.0
ALL FIELDS	35,692	13041	22651	36.5	10327	14568	69.7	574	497	3.0	273	352	1.8	383	954	3.7	35	49	0.2	1449	6231	21.5

(1) Totals include three who did not designate racial/ethnic origin.

Source: Degrees and Other Formal Awards Conferred, 1984–85 Survey, Office of Civil rights and 1986–87 Survey, National Center for Education Statistics

TABLE 2-44

PERCENT WOMEN AMONG SCIENCE & ENGINEERING GRADUATES BY RACE/ETHNICITY, 1985 & 1987

FIELD	All Women		White		Black		Hispanic		Indian		UnderRep Min		Asian		All Min		Foreign	
BACHELORS	'85	'87	'85	'87	'85	'87	'85	'87	'85	'87	'85	'87	'85	'87	'85	'87	'85	'87
Agricultural Sciences	36.4	31.2	37.6	31.1	24.3	39.1	37.7	34.2	39.4	34.5	30.3	36.7	46.7	43.1	34.1	38.8	15.7	19.0
Computer & Info Sciences	37.8	34.7	36.7	32.3	51.9	54.6	41.8	42.9	44.8	45.7	48.9	51.3	43.5	39.4	46.8	46.8	31.6	31.3
Engineering	14.5	15.3	14.5	14.9	27.8	30.5	15.2	16.3	17.9	14.0	21.7	23.5	18.9	19.0	20.2	21.0	7.6	8.8
Life Sciences	47.8	48.4	47.3	47.6	55.2	61.7	46.2	47.8	44.4	46.3	51.6	55.8	47.5	48.7	50.2	52.7	37.1	49.7
Mathematics	46.0	46.5	46.7	46.8	51.8	52.5	43.7	36.8	39.3	37.7	49.2	48.2	45.1	48.6	47.3	48.4	37.6	35.7
Physical Sciences	31.0	28.4	30.6	27.1	45.7	47.3	26.4	32.2	33.3	37.8	38.6	42.0	34.0	33.0	37.0	38.3	25.8	27.4
SUBTOTAL NATURAL S&E	30.6	30.3	30.4	29.7	45.4	48.5	31.4	32.4	34.6	33.1	40.0	42.2	32.9	32.8	37.0	37.9	18.0	20.3
Psychology	68.0	68.9	67.9	68.8	72.2	73.1	68.5	67.2	56.3	65.1	70.2	70.7	67.0	64.9	69.7	69.4	53.7	67.9
Social Services	44.0	44.0	43.1	43.1	52.9	55.0	46.2	45.8	48.2	46.3	50.7	51.7	50.1	50.8	50.6	51.5	36.5	36.9
SUBTOTAL	51.3	51.7	50.7	51.1	58.6	60.4	53.2	52.8	50.8	51.7	56.6	57.5	55.0	54.8	56.3	56.9	40.3	42.6
TOTAL S&E	38.8	39.0	38.5	38.7	9.9	54.2	41.6	41.5	42.3	42.3	13.1	49.4	37.7	38.1	15.9	45.1	22.6	24.7
ALL FIELDS	50.8	51.5	56.9	51.7	59.8	60.2	53.1	52.3	52.5	54.2	57.4	57.5	46.6	47.1	55.0	54.7	30.9	33.1
MASTERS																		
Agricultural Sciences	31.2	30.1	35.5	33.8	40.9	20.3	20.5	31.8	25.0	33.3	31.0	24.8	28.6	37.9	30.1	28.9	19.4	18.9
Computer & Info Sciences	28.7	29.4	29.0	31.2	39.8	38.7	30.1	25.8	30.0	13.0	35.6	32.6	33.8	32.7	34.4	32.7	25.6	23.5
Engineering	10.7	12.6	12.8	14.6	18.2	21.7	12.2	13.6	9.4	15.4	14.9	17.2	11.3	11.8	12.4	13.7	6.4	7.5
Life Sciences	47.7	48.7	47.9	48.3	55.9	52.0	58.0	53.5	54.5	63.6	56.6	52.9	50.9	55.1	54.4	53.8	39.3	47.2
Mathematics	35.0	39.1	37.9	41.0	36.0	36.2	41.9	29.1	50.0	66.7	39.4	35.1	34.2	39.9	36.2	37.9	27.9	34.9
Physical Sciences	23.3	25.0	24.2	25.6	31.6	42.9	19.4	26.7	6.7	22.2	23.3	33.0	29.3	27.8	26.4	30.2	18.9	21.0
SUBTOTAL NATURAL S&E	22.1	23.9	25.1	26.4	33.6	33.1	25.0	22.2	24.1	24.2	29.3	27.8	21.9	23.2	24.6	25.0	14.8	16.6
Psychology	63.9	65.2	63.8	65.2	65.8	69.1	58.1	62.6	63.3	64.9	63.0	66.5	63.5	70.8	63.0	67.2	60.9	59.2
Social Services	38.4	39.5	41.0	42.0	44.9	45.7	41.4	37.1	41.4	26.1	43.4	42.0	28.7	39.2	39.0	41.2	27.6	29.3
SUBTOTAL	49.8	50.7	52.1	53.3	55.4	57.1	49.6	49.8	52.5	50.0	53.2	54.2	38.4	49.5	49.7	53.2	32.2	32.4
TOTAL S&E	30.5	31.4	34.3	35.0	44.6	43.6	35.4	31.6	34.1	34.4	40.4	38.2	24.1	25.9	32.1	31.9	17.8	19.2
ALL FIELDS	50.0	51.2	53.0	53.9	63.4	62.9	56.4	52.7	52.9	53.2	60.7	59.1	37.9	38.8	54.8	53.4	27.1	28.2
DOCTORATES																		
Agricultural Sciences	14.0	16.9	16.7	19.1	10.0	27.8	8.3	20.0	0.0	0.0	8.7	22.9	13.5	12.5	11.7	17.9	8.4	12.4
Computer & Info Sciences	10.1	13.9	12.1	18.7	0.0	50.0	0.0	16.7	0.0	0.0	0.0	22.2	7.7	20.0	5.3	20.7	5.9	4.0
Engineering	6.4	6.9	7.9	10.2	14.7	10.3	1.2	4.4	25.0	0.0	5.8	6.0	7.6	7.0	7.0	6.7	4.6	3.8
Life Sciences	32.7	34.9	32.1	35.1	38.5	43.4	43.1	39.0	50.0	20.0	41.3	40.2	37.3	44.3	39.3	42.5	29.2	30.4
Mathematics	15.6	17.3	19.2	18.3	0.0	11.1	28.6	22.2		0.0	21.4	15.8	14.3	35.1	17.5	28.6	9.9	14.2
Physical Sciences	16.3	17.2	16.4	18.7	25.9	15.4	13.9	28.3	33.3	0.0	19.7	23.6	25.8	22.3	24.0	22.7	13.5	12.2
SUBTOTAL NATURAL S&E	18.1	18.7	20.8	22.3	24.8	27.0	18.8	22.6	30.8	6.7	21.4	23.6	19.1	21.5	19.9	22.2	10.5	10.8
Psychology	48.8	53.3	48.9	52.7	55.0	63.9	52.2	67.6	33.3	62.5	53.7	65.2	51.2	56.9	53.1	63.4	37.1	45.8
Social Services	32.2	30.5	35.8	35.3	40.6	40.0	30.2	26.5	75.0	50.0	37.4	34.7	32.8	23.4	36.2	31.1	17.1	14.5
SUBTOTAL	40.6	42.2	43.1	45.2	48.0	52.1	39.4	47.5	57.1	60.0	45.2	50.7	40.6	36.7	44.1	47.0	19.9	18.7
TOTAL S&E	25.5	26.1	29.0	30.9	38.6	41.6	25.7	32.3	40.0	37.1	32.4	36.8	22.1	23.9	27.1	30.1	12.4	12.0
ALL FIELDS	34.1	35.2	37.4	39.4	51.8	54.0	36.4	41.5	51.8	44.2	46.4	48.5	27.1	27.5	39.3	40.9	16.6	17.0

SOURCE: U.S. Dept. of Education, "Degrees and Other Formal Awards Conferred" surveys and Integrated Postsecondary Education Data System "Completions" survey.

TABLE 2-45

DOCTOR'S DEGREES BY RACIAL/ETHNIC GROUP AND SEX, 1976-77 TO 1988-89

Year and sex of student	Total	White non-Hispanic	Black non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/ Alaskan Native	Non-resident alien
1	2	3	4	5	6	7	8
	Number of degrees conferred						
1976-77							
Total2/	33,126	26,851	1,253	522	658	95	3,747
Men	25,036	20,032	766	383	540	67	3,248
Women	8,090	6,819	487	139	118	28	499
1978-79							
Total3/	32,675	26,138	1,268	439	811	104	3,915
Men	23,488	18,433	734	294	646	69	3,312
Women	9,187	7,705	534	145	165	35	603
1980-81							
Total4/	32,839	25,908	1,265	456	877	130	4,203
Men	22,595	17,310	694	277	655	95	3,564
Women	10,244	8,598	571	179	222	35	639
1984-85							
Total5/	32,307	23,934	1,154	677	1,106	119	5,317
Men	21,296	15,017	561	431	802	64	4,421
Women	11,011	8,917	593	246	304	55	896
1986-87							
Total6/	34,033	24,435	1,060	750	1,097	104	6,587
Men	22,059	14,813	688	439	795	58	5,466
Women	11,974	9,622	372	311	302	46	1,121
1988-89							
Total7/	35,692	24,895	1,071	625	1,337	84	7,680
Men	22,651	14,568	697	352	954	49	6,231
Women	13,041	10,327	374	273	383	35	1,449
	Percentage distribution of degrees conferred						
1976-77							
Total2/	100.0	81.1	3.8	1.6	2.0	0.3	11.3
Men	100.0	80.0	3.1	1.5	2.2	0.3	13.0
Women	100.0	84.3	6.0	1.7	1.5	0.3	6.2
1978-79							
Total3/	100.0	80.0	3.9	1.3	2.5	0.3	12.0
Men	100.0	78.5	3.1	1.3	2.8	0.3	14.1
Women	100.0	83.9	5.8	1.6	1.8	0.4	6.6
1980-81							
Total4/	100.0	78.9	3.9	1.4	2.7	0.4	12.8
Men	100.0	76.6	3.1	1.2	2.9	0.4	15.8
Women	100.0	83.9	5.6	1.7	2.2	0.3	6.2
1984-85							
Total5/	100.0	74.1	3.6	2.1	3.4	0.4	16.5
Men	100.0	70.5	2.6	2.0	3.8	0.3	20.8
Women	100.0	81.0	5.4	2.2	2.8	0.5	8.1
1986-87							
Total6/	100.0	71.8	3.1	2.2	3.2	0.3	19.4
Men	100.0	67.2	2.2	2.0	3.6	0.3	24.8
Women	100.0	80.4	4.8	2.6	2.5	0.4	9.4
1988-89							
Total7/	100.0	69.7	3.0	1.8	3.7	0.2	21.5
Men	100.0	64.3	2.2	1.6	4.2	0.2	27.5
Women	100.0	79.2	4.4	2.1	2.9	0.3	11.1

1/Includes Ph.D., Ed.D, and comparable degrees at the doctoral level. Excludes first-professional degrees.
2/Excludes 106 men whose racial/ethnic group was not available.
3/Excludes 53 men and 2 women whose racial/ethnic group was not available.
4/Excludes 116 men and 3 women whose racial/ethnic group was not available.
5/Excludes 404 men and 232 women whose racial/ethnic group was not available.
6/Reported racial/ethnic distributions of students by level of degree, field of study was not available.
6/Reported racial/ethnic distributions of students by level of degree, field of degree, and sex were used to estimate race/ethnicity for students whose race/ethnicity was not reported. Excludes 496 men and 394 women whose racial/ethnic group and field of study was not available. Data are preliminary.

SOURCE: U.S. Dept. of Education, "Degrees and Other Formal Awards Conferred" surveys and Integrated Postsecondary Education Data System "Completions" survey.

TABLE 2-46

MASTER'S DEGREES BY RACIAL/ETHNIC GROUP AND SEX, 1976-77 TO 1988-89

Year and sex of student	Total	White non-Hispanic	Black non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/ Alaskan Native	Non-resident alien
1	2	3	4	5	6	7	8
	Number of degrees conferred						
1976-77							
Total1/	316,602	266,061	21,037	6,071	5,122	967	17,344
Men	167,396	139,210	7,781	3,268	3,123	521	13,493
Women	149,206	126,851	13,256	2,803	1,999	446	3,851
1978-79							
Total2/	300,255	249,360	19,418	5,555	5,496	999	19,427
Men	152,637	124,058	7,070	2,786	3,325	495	14,903
Women	147,618	125,302	12,348	2,769	2,171	504	4,524
1980-81							
Total3/	294,183	241,216	17,133	6,461	6,282	1,034	22,057
Men	145,666	115,562	6,158	3,085	3,773	501	16,587
Women	148,517	125,654	10,975	3,376	2,509	533	5,470
1984-85							
Total4/	280,421	223,628	13,939	6,864	7,782	1,256	26,952
Men	139,417	106,059	5,200	3,059	4,842	583	19,674
Women	141,004	117,569	8,739	3,805	2,940	673	7,278
1986-87							
Total5/	289,341	228,870	13,867	7,044	8,558	1,184	29,898
Men	141,264	105,573	5,151	3,330	5,238	517	21,455
Women	148,077	123,297	8,716	3,714	3,320	587	8,443
1988-89							
Total6/	308,872	241,607	14,076	7,270	10,714	1,133	34,072
Men	148,486	109,184	5,200	3,360	6,247	500	23,995
Women	160,386	132,423	8,876	3,910	4,467	633	10,077
	Percentage distribution of degrees conferred						
1976-77							
Total1/	100.0	84.0	6.6	1.9	1.6	0.3	5.5
Men	100.0	83.2	4.6	2.0	1.9	0.3	8.1
Women	100.0	85.0	8.9	1.9	1.3	0.3	2.6
1978-79							
Total2/	100.0	83.0	6.5	1.9	1.8	0.3	6.5
Men	100.0	81.3	4.6	1.8	2.2	0.3	9.8
Women	100.0	84.9	8.4	1.9	1.5	0.3	3.1
1980-81							
Total3/	100.0	82.0	5.8	2.2	2.1	0.4	7.5
Men	100.0	79.3	4.2	2.1	2.6	0.3	11.4
Women	100.0	84.6	7.4	2.3	1.7	0.4	3.7
1984-85							
Total4/	100.0	79.7	5.0	2.4	2.8	0.4	9.6
Men	100.0	76.1	3.7	2.2	3.5	0.4	14.1
Women	100.0	83.4	6.2	2.7	2.1	0.5	5.2
1986-87							
Total5/	100.0	79.1	4.8	2.4	3.0	0.4	10.3
Men	100.0	74.7	3.6	2.4	3.7	0.4	15.2
Women	100.0	83.3	5.9	2.5	2.2	0.4	5.7
1988-89							
Total6/	100.0	78.2	4.6	2.4	3.5	0.4	11.0
Men	100.0	73.5	3.5	2.3	4.2	0.3	16.2
Women	100.0	82.6	5.5	2.4	2.8	0.4	6.3

1/Excludes 387 men and 175 women whose racial/ethnic group was not available.
2/Excludes 733 men and 91 women whose racial/ethnic group was not available.
3/Excludes 1,377 men and 179 women whose racial/ethnic group was not available.
4/Excludes 3,973 men and 1,857 women whose racial/ethnic group was not available.
5/Reported racial/ethnic distributions of students by level of degree, field of degree, and sex were used to estimate race/ethnicity for students whose race/ethnicity was not reported. Excludes 99 men and 117 women whose racial/ethnic group and field of degree, and sex were used to estimate race/ethnicity for students whose race/ethnicity was not reported. Excludes 40 men and 47 women whose racial/ethnic group and field of study was not available.
7/Reported racial/ethnic distributions of students by level of degree, field of degree, and sex were used to estimate race/ethnicity for students whose race/ethnicity was not reported. Excludes 54 men and 13 women whose racial/ethnic group and field of study was not available. Data are preliminary.

SOURCE: U.S. Dept. of Education, "Degrees and Other Formal Awards Conferred" surveys and Integrated Postsecondary Education Data System "Completions" survey.

TABLE 2-47

BACHELOR'S DEGREES BY RACIAL/ETHNIC GROUP AND SEX, 1976-77 TO 1988-89

Year and sex of student	Total	White non-Hispanic	Black non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/ Alaskan Native	Non-resident alien
1	2	3	4	5	6	7	8
	Number of degrees conferred						
1976-77							
Total1/	917,900	807,688	58,636	18,743	13,793	3,326	15,714
Men	494,424	438,161	25,147	10,318	7,638	1,804	11,356
Women	423,476	369,527	33,489	8,425	6,155	1,522	4,358
1978-79							
Total2/	919,540	802,542	60,246	20,096	15,407	3,410	17,839
Men	476,065	418,215	24,659	10,418	8,261	1,736	12,776
Women	443,475	384,327	35,587	9,678	7,146	1,674	5,063
1980-81							
Total3/	934,800	807,319	60,673	21,832	18,794	3,593	22,589
Men	469,625	406,173	24,511	10,810	10,107	1,700	16,324
Women	465,175	401,146	36,162	11,022	8,687	1,893	6,265
1984-85							
Total4/	968,311	826,106	57,473	25,874	25,395	4,246	29,217
Men	476,148	405,085	23,018	12,402	13,554	1,998	20,091
Women	492,163	421,021	34,455	13,472	11,841	2,248	9,126
1986-87							
Total5/	991,260	841,820	56,555	26,990	32,618	3,971	29,306
Men	480,780	406,751	22,499	12,864	17,249	1,819	19,598
Women	510,480	435,069	34,056	14,126	15,369	2,152	9,708
1988-89							
Total6/	1,015,239	858,186	58,016	29,800	38,219	4,046	26,972
Men	481,687	406,656	22,365	13,920	19,537	1,768	17,441
Women	533,552	451,530	35,651	15,880	18,682	2,278	9,531
	Percentage distribution of degrees conferred						
1976-77							
Total1/	100.0	88.0	6.4	2.0	1.5	0.4	1.7
Men	100.0	88.6	5.1	2.1	1.5	0.4	2.3
Women	100.0	87.3	7.9	2.0	1.5	0.4	1.0
1978-79							
Total2/	100.0	87.3	6.6	2.2	1.7	0.4	1.9
Men	100.0	87.8	5.2	2.2	1.7	0.4	2.7
Women	100.0	86.7	8.0	2.2	1.6	0.4	1.1
1980-81							
Total3/	100.0	86.4	6.5	2.3	2.0	0.4	2.4
Men	100.0	86.5	5.2	2.3	2.2	0.4	3.5
Women	100.0	86.2	7.8	2.4	1.9	0.4	1.3
1984-85							
Total4/	100.0	85.3	5.9	2.7	2.6	0.4	3.0
Men	100.0	85.1	4.8	2.6	2.8	0.4	4.2
Women	100.0	85.5	7.0	2.7	2.4	0.5	1.9
1986-87							
Total5/	100.0	84.9	5.7	2.7	3.3	0.4	3.0
Men	100.0	84.6	4.7	2.7	3.6	0.4	4.1
Women	100.0	85.2	6.7	2.8	3.0	0.4	1.9
1988-89							
Total6/	100.0	84.5	5.7	2.9	3.8	0.4	2.7
Men	100.0	84.4	4.6	2.9	4.1	0.4	3.6
Women	100.0	84.6	6.7	3.0	3.5	0.4	1.8

1/Excludes 1,121 men and 528 women whose racial/ethnic group was not available.
2/Excludes 1,279 men and 571 women whose racial/ethnic group was not available.
3/Excludes 258 men and 82 women whose racial/ethnic group was not available.
4/Excludes 6,380 men and 4,786 women whose racial/ethnic group was not available.
5/Reported racial/ethnic distributions of students by level of degree, field of degree, and sex were used to estimate race/ethnicity for students whose race/ethnicity was not reported. Excludes 74 men and 5 women whose racial/ethnic group and field of study was not available.
6/Reported racial/ethnic distributions of students by level of degree, field of degree, and sex were used to estimate race/ethnicity for students whose race/ethnicity was not reported. Excludes 1,410 men and 1,018 women whose racial/ethnic group and field of study was not available. Data are preliminary.

Source: Women and Minorities in Science and Engineering, National Science Foundation, 1986 and Earned Degrees, 1982-89, Center for Education Statistics

TABLE 2-48

GRADUATE DEGREE ATTAINMENT RATES IN SCIENCE AND ENGINEERING, BY SEX, 1972 – 1989

	Bachelors		Masters				PhDs							
			No.		2-Yr		No.		6-Yr		7-Yr		8-Yr	
Year	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
1964	120,888	32,473												
1965	128,723	36,213												
1966	133,989	39,482	33,201	4,882	27.5	15.0								
1967	143,847	44,002	36,083	5,717	28.0	15.8								
1968	158,711	53,463	38,913	6,512	29.0	16.5								
1969	181,323	63,196	41,111	7,314	28.6	16.6								
1970	195,244	68,878	40,741	8,577	25.7	16.0	16,112	1,527	13.3	4.7				
1971	198,180	72,996	41,966	8,658	23.1	13.7	16,666	1,800	12.9	5.0	13.8	5.5		
1972	203,557	77,671	44,010	9,557	22.5	13.9	16,502	1,910	12.3	4.8	12.8	5.3	13.7	5.9
1973	211,552	83,839	44,474	9,760	22.4	13.4	16,310	2,288	11.3	5.2	12.2	5.8	12.7	6.3
1974	213,269	91,793	43,630	10,545	21.4	13.6	15,453	2,412	9.7	4.5	10.7	5.5	11.5	6.1
1975	201,578	93,341	42,847	11,005	20.3	13.1	15,147	2,637	8.4	4.2	9.5	4.9	10.5	6.0
1976	196,577	95,597	42,675	12,072	20.0	13.2	14,500	2,788	7.4	4.0	8.0	4.4	9.1	5.2
1977	191,090	97,453	43,577	13,154	21.6	14.1	13,979	2,958	7.1	4.1	7.2	4.3	7.7	4.7
1978	188,107	100,060	42,547	13,690	21.6	14.3	13,157	3,039	6.5	3.9	6.6	4.2	6.7	4.4
1979	186,333	102,292	40,416	14,040	21.2	14.4	13,053	3,310	6.2	3.9	6.4	4.3	6.6	4.5
1980	186,009	105,974	40,010	14,383	21.3	14.4	13,740	3,784	6.4	4.1	6.5	4.5	6.7	4.9
1981	184,421	106,783	38,835	14,875	20.8	14.5	13,880	4,116	6.9	4.4	6.5	4.5	6.6	4.9
1982	186,995	111,473	40,020	15,768	21.5	14.9	13,747	4,270	7.0	4.5	6.8	4.6	6.4	4.7
1983	190,508	114,022	40,857	16,873	22.2	15.8	13,769	4,624	7.2	4.7	7.0	4.8	6.8	5.0
1984	193,152	115,358	41,479	17,396	22.2	15.6	13,810	4,701	7.3	4.7	7.2	4.8	7.0	4.9
1985	197,114	118,837	42,570	18,018	22.3	15.8	13,899	4,881	7.5	4.8	7.4	4.9	7.3	5.0
1986	203,384	120,566	43,586	18,871	22.6	16.4	14,168	5,085	7.6	4.8	7.6	5.0	7.5	5.1
1987	195,633	123,309	43,204	19,301	21.9	16.2	14,466	5,237	7.8	4.9	7.8	4.9	7.8	5.1
1988	184,671	122,089	44,416	19,481	21.8	16.2	15,159	5,573	8.1	5.0	8.2	5.2	8.1	5.3
1989	182,056	122,175	47,715	20,158	24.4	16.3	15,291	5,859	8.0	5.1	8.2	5.3	8.3	5.5

Note: 2-Year Masters attainment rates based on Bachelors two years previous, 6-Year, 7-Year and 8-Year PhD attainment rates based on Bachelors degrees previous 6, 7 & 8 years respectively.

Source: Science and Engineering Degrees: 1966-88, a source book, National Science Foundation, NSF 90-312

TABLE 2-49

SCIENCE/ENGINEERING PhD DEGREES PER THOUSAND 30-YEAR-OLDS IN THE U.S. POPULATION: 1966 – 1988

Year	Total			Men			Women			% Change All 30-year-olds
	30-year-olds (thousands)	Science/ engineering degrees	Degrees per thousand	30-year-olds (thousands)	Science/ engineering degrees	Degrees per thousand	30-year-olds (thousands)	Science/ engineering degrees	Degrees per thousand	
1966	2,274	11,558	5.1	1,128	10,637	9.4	1,146	921	0.8	
1967	2,311	13,097	5.7	1,144	12,006	10.5	1,167	1,091	0.9	1.63
1968	2,398	14,627	6.1	1,186	13,317	11.2	1,213	1,310	1.1	3.76
1969	2,444	16,277	6.7	1,207	14,774	12.2	1,237	1,503	1.2	1.92
1970	2,488	18,044	7.3	1,232	16,400	13.3	1,256	1,644	1.3	1.80
1971	2,631	19,363	7.4	1,306	17,373	13.3	1,326	1,990	1.5	5.75
1972	2,795	19,324	6.9	1,388	17,182	12.4	1,407	2,142	1.5	6.23
1973	3,178	19,352	6.1	1,579	16,842	10.7	1,599	2,510	1.6	13.70
1974	3,008	18,694	6.2	1,492	16,032	10.7	1,516	2,662	1.8	-5.35
1975	2,967	18,710	6.3	1,473	15,805	10.7	1,493	2,905	1.9	-1.36
1976	2,913	18,268	6.3	1,452	15,219	10.5	1,461	3,049	2.1	-1.82
1977	4,001	17,723	4.4	1,999	14,567	7.3	2,001	3,156	1.6	37.35
1978	3,921	17,383	4.4	1,855	13,995	7.5	1,866	3,388	1.8	-2.00
1979	3,734	17,589	4.7	1,857	13,913	7.5	1,877	3,676	2.0	-4.77
1980	3,737	17,524	4.7	1,860	13,640	7.3	1,877	3,884	2.1	0.08
1981	3,886	17,996	4.6	1,935	13,880	7.2	1,951	4,116	2.1	3.99
1982	3,990	18,017	4.5	1,993	13,747	6.9	1,997	4,270	2.1	2.68
1983	4,107	18,393	4.5	2,053	13,769	6.7	2,054	4,624	2.3	2.93
1984	4,225	18,514	4.4	2,114	13,810	6.5	2,111	4,704	2.2	2.87
1985	4,323	18,710	4.3	2,169	13,899	6.4	2,154	4,811	2.2	2.32
1986	4,394	19,253	4.4	2,205	14,168	6.4	2,189	5,085	2.3	1.64
1987	4,561	19,713	4.3	2,294	14,476	6.3	2,267	5,237	2.3	3.80
1988	4,575	20,732	4.5	2,303	15,159	6.6	2,272	5,573	2.5	0.31

Note: Detail may not add to totals due to rounding.

Source: Degrees and Other Formal Awards Conferred, 1988–89 Survey, National Center for Education Statistics

TABLE 2-50
ASSOCIATE DEGREES AWARDED BY FIELD, SEX & RACE/ETHNICITY 1988–89

FIELD	TOTAL	Women	Men	%W	White			Black			Hispanic			Asian			Indian			Foreign		
					Wom	Men	%W	Wom	Men	%B	Wom	Men	%H	Wom	Men	%A	Wom	Men	%I	Wom	Men	%F
ALL FIELDS (1)	429946	247037	182909	57.5	203049	150073	82.1	21585	12826	8.0	11122	9172	4.7	6113	6320	2.9	2003	1315	0.8	3165	3203	1.5
Agriculture & Nat Resources	4740	1666	3074	35.1	1561	2913	94.4	18	24	0.9	59	50	2.3	9	13	0.5	6	29	0.7	13	45	1.2
Architecture & Env. Design	1815	1559	256	85.9	1355	191	85.2	55	13	3.7	64	17	4.5	47	15	3.4	2	2	0.2	36	18	3.0
Area & Ethnic Studies	15	7	8	46.7	2	1	20.0	1	4	33.3	0	0	0.0	0	1	6.7	4	2	40.0	0	0	0.0
Business & Management	106579	73458	33121	68.9	58752	26753	80.2	7924	3057	10.3	3288	1455	4.5	1970	1041	2.8	589	193	0.7	935	622	1.5
Communications	3744	1631	2113	43.6	1359	1792	84.2	138	168	5.2	52	74	3.4	23	27	1.3	9	13	0.6	50	39	2.4
Computer & Info Sciences	7914	3909	4005	49.4	2865	3180	76.4	556	315	11.0	177	199	4.8	187	170	4.5	39	24	0.8	85	117	2.6
Education	7330	5198	2132	70.9	4229	1584	79.3	474	253	9.9	297	157	6.2	57	46	1.4	85	42	1.7	56	50	1.4
Engineering	2682	313	2369	11.7	230	1884	78.8	24	103	4.7	23	111	5.0	26	180	7.7	2	11	0.5	8	80	3.3
Engineering Technologies	53176	4986	48190	9.4	3933	39909	82.4	541	2970	6.6	188	2224	4.5	215	2151	4.4	47	349	0.7	62	587	1.2
Foreign Languages	332	220	112	66.3	166	90	77.1	9	2	3.3	28	7	10.5	4	4	2.4	5	5	3.0	8	4	3.6
Health Professions	59328	52351	6977	88.2	44758	5624	84.9	4374	534	8.3	1610	442	3.5	920	227	1.9	360	50	0.7	329	100	0.7
Home Economics	10430	7126	3304	68.3	5591	2910	81.5	812	193	9.6	390	65	4.4	181	90	2.6	61	15	0.7	91	31	1.2
Law	3742	3271	471	87.4	2838	378	85.9	214	44	6.9	105	28	3.6	40	2	1.1	28	8	1.0	46	11	1.5
Letters	526	362	164	68.8	287	119	77.2	24	22	8.7	17	6	4.4	9	4	2.5	9	7	3.0	16	6	4.2
Liberal/General Studies	118463	69302	49161	58.5	57266	39817	82.0	4707	3431	8.9	3799	2887	5.6	1852	1483	2.8	550	358	0.8	1128	1185	2.0
Library/Archival Sciences	103	91	12	88.3	78	10	85.4	5	0	4.9	4	1	4.9	2	0	1.9	2	1	2.9	0	0	0.0
Life Sciences	970	558	412	57.5	418	310	75.1	49	18	6.9	36	26	6.4	25	31	5.8	12	8	2.1	18	19	3.8
Mathematics	654	239	415	36.5	181	301	73.7	9	17	4.0	17	33	7.6	23	45	10.4	3	6	1.4	6	13	2.9
Military Science	164	31	133	18.9	24	109	81.1	5	17	13.4	2	7	5.5	0	0	0.0	0	0	0.0	0	0	0.0
Multi/Interdiciplinary	11312	6177	5135	54.6	5488	4504	88.3	278	290	5.0	187	170	3.2	148	119	2.4	35	14	0.4	41	38	0.7
Parks & Recreation	615	312	303	50.7	279	249	85.9	20	25	7.3	11	19	4.9	1	5	1.0	0	1	0.2	1	4	0.8
Philosophy & Religion	81	23	58	28.4	20	50	86.4	0	0	0.0	1	1	2.5	0	3	3.7	1	1	2.5	1	3	4.9
Physical Sciences	1947	812	1135	41.7	694	932	83.5	43	39	4.2	32	60	4.7	26	69	4.9	2	1	0.2	15	34	2.5
Protective Services	11655	3285	8370	28.2	2531	7109	82.7	471	561	8.9	221	480	6.0	15	123	1.2	32	61	0.8	15	36	0.4
Psychology	1085	805	280	74.2	643	210	78.6	53	30	7.6	71	24	8.8	9	5	1.3	8	5	1.2	21	6	2.5
Public Affairs	4482	2216	2266	49.4	1676	1871	79.1	359	134	11.0	76	141	4.6	50	47	2.2	39	31	1.6	16	42	1.3
Social Sciences	2700	1526	1174	56.5	1117	840	72.5	163	162	12.0	118	88	7.6	73	41	4.2	29	15	1.6	26	28	2.0
Theology	568	248	320	43.7	224	286	89.8	6	18	4.2	8	9	3.0	6	2	1.4	2	0	0.4	2	5	1.2
Visual & Performing Arts	12794	5355	7439	41.9	4484	6147	83.1	253	382	5.0	241	391	4.9	195	376	4.5	42	63	0.8	140	80	1.7

(1) Reported racial/ethnic distributions of students by level of degree, field of degree, and sex were used to estimate race/ethnicity for students whose race/ethnicity was not reported. Excludes 2,497 men and 2,767 women whose racial/ethnic group and field of study was not available.

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 2-51
ASSOCIATE DEGREES CONFERRED, BY RACE/ETHNICITY, MAJOR FIELD AND SEX 1986-87

Major field of study and sex of student	Total	White non-Hispanic	Black non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/ Alaskan Native	Nonresident alien
1	2	3	4	5	6	7	8
All fields, total [1]	**436,308**	**361,819**	**35,466**	**19,345**	**11,794**	**3,196**	**4,688**
Men	190,841	158,126	13,956	8,764	6,172	1,263	2,560
Women	245,467	203,693	21,510	10,581	5,622	1,933	2,128
Agriculture and natural resources, total	5,458	5,149	62	125	27	51	44
Men	3,691	3,492	46	61	20	36	36
Women	1,767	1,657	16	64	7	15	8
Architecture and environmental design, total	1,665	1,448	56	73	54	4	30
Men	229	169	10	23	19	1	7
Women	1,436	1,279	46	50	35	3	23
Area and ethnic studies, total	14	3	3	2	0	6	0
Men	6	2	0	1	0	3	0
Women	8	1	3	1	0	3	0
Business and management, total	115,231	93,990	11,699	4,694	2,853	811	1,184
Men	36,924	30,367	3,479	1,376	997	203	502
Women	78,307	63,623	8,220	3,318	1,856	608	682
Communications, total	3,541	2,972	329	124	41	22	53
Men	2,065	1,750	190	64	24	9	28
Women	1,476	1,222	139	60	17	13	25
Computer and information sciences, total	9,101	7,110	954	415	404	47	171
Men	4,791	3,855	415	207	199	20	95
Women	4,310	3,255	539	208	205	27	76
Education, total	7,333	5,942	639	414	130	134	74
Men	2,113	1,654	222	124	57	33	23
Women	5,220	4,288	417	290	73	101	51
Engineering, total	4,539	3,400	261	337	387	28	126
Men	4,061	3,060	225	307	332	22	115
Women	478	340	36	30	55	6	11
Engineering technologies, total	57,973	47,936	4,019	2,445	2,592	332	649
Men	52,860	43,950	3,526	2,247	2,255	298	584
Women	5,113	3,986	493	198	337	34	65
Foreign languages, total	421	353	14	22	13	11	8
Men	231	203	9	5	5	6	3
Women	190	150	5	17	8	5	5
Health professions, total	62,547	53,876	4,878	2,046	1,028	403	316
Men	7,214	5,945	599	374	173	51	72
Women	55,333	47,931	4,279	1,672	855	352	244
Home economics, total	9,328	7,616	969	396	207	54	84
Men	2,738	2,461	131	44	66	17	19
Women	6,590	5,157	838	352	141	37	65
Law, total	2,498	2,179	170	94	40	11	4
Men	287	216	44	19	3	5	0
Women	2,211	1,963	126	75	37	6	4
Letters, total	508	390	35	29	33	6	15
Men	158	115	14	8	13	3	5
Women	350	275	21	21	20	3	10
Liberal/general studies, total	108,097	89,365	7,885	5,838	2,718	813	1,478
Men	46,337	38,103	3,250	2,546	1,263	351	824
Women	61,760	51,262	4,635	3,292	1,455	462	654

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 2-51 (continued)

ASSOCIATE DEGREES CONFERRED, BY RACE/ETHNICITY, MAJOR FIELD AND SEX 1986-87

Major field of study and sex of student	Total	White non-Hispanic	Black non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/ Alaskan Native	Nonresident alien
1	2	3	4	5	6	7	8
Library and archival science, total	117	104	5	4	3	0	1
Men	19	14	1	2	1	0	1
Women	98	90	4	2	2	0	0
Life sciences, total	892	617	105	54	62	18	36
Men	397	288	21	30	25	5	28
Women	495	329	84	24	37	13	8
Mathematics, total	666	499	39	40	72	4	12
Men	418	313	27	22	46	2	8
Women	248	186	12	18	26	2	4
Military sciences, total	50	39	9	1	0	1	0
Men	48	37	9	1	0	1	0
Women	2	2	0	0	0	0	0
Multi/interdisciplinary studies, total	9,794	8,800	399	239	273	33	50
Men	4,563	4,057	181	124	154	13	34
Women	5,231	4,743	218	115	119	20	16
Parks and recreation, total	551	478	38	21	8	0	6
Men	278	227	29	12	5	0	5
Women	273	251	9	9	3	0	1
Philosophy and religion, total	100	90	4	3	1	2	0
Men	64	57	2	3	1	1	0
Women	36	33	2	0	0	1	0
Physical sciences, total	2,061	1,787	104	78	67	6	39
Men	1,253	1,080	53	51	36	3	30
Women	808	687	51	27	31	3	9
Protective services, total	11,910	9,739	1,132	788	134	81	36
Men	8,711	7,290	661	579	109	46	26
Women	3,199	2,449	471	209	25	35	10
Psychology, total	1,014	825	77	67	20	17	8
Men	292	233	29	16	6	6	2
Women	722	592	48	51	14	11	6
Public affairs, total	3,560	2,774	459	141	69	63	54
Men	1,548	1,277	129	69	19	14	40
Women	2,012	1,497	330	72	50	49	14
Social sciences, total	2,584	1,853	304	256	95	52	24
Men	1,095	792	155	80	37	18	13
Women	1,489	1,061	149	176	58	34	11
Theology, total	594	527	34	18	3	1	11
Men	355	308	30	11	1	0	5
Women	239	219	4	7	2	1	6
Visual and performing arts, total	14,161	11,976	784	581	460	185	175
Men	8,095	6,811	469	358	306	96	55
Women	6,066	5,165	315	223	154	89	120

[1] This tabulation excludes 683 men and 146 women whose racial/ethnic group could not be imputed. Because of imputation methods, field of study totals by race/ethnicity may differ slightly from field of study by sex. Data are preliminary.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey. (This table was prepared June 1989.)

TABLE 2-52

ASSOCIATE DEGREES AND OTHER SUB-BACCALAUREATE AWARDS BY LENGTH OF CURRICULUM, SEX AND FIELD, 1986-87

Field of study	Less than 1-year awards			1- to 4-year awards			Associate degrees		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
1	2	3	4	5	6	7	8	9	10
Total	**43,933**	**21,253**	**22,680**	**109,613**	**48,598**	**61,015**	**437,137**	**191,525**	**245,612**
Agriculture and natural resources, total	1,612	1,248	364	1,640	1,148	492	5,428	3,663	1,765
Agricultural business and agricultural production	1,382	1,076	306	1,389	971	418	3,655	2,473	1,182
Agricultural science	187	134	53	107	65	42	806	372	434
Renewable natural resources	43	38	5	144	112	32	967	818	149
Architecture and environmental design	5	0	5	593	61	532	1,662	228	1,434
Area and ethnic studies	39	12	27	208	9	199	19	8	11
Business and management	11,730	2,604	9,126	34,886	5,244	29,642	115,197	36,906	78,291
Accounting	93	20	73	776	181	595	5,253	1,438	3,815
Business and management, general	553	214	339	836	285	551	12,363	4,882	7,481
Business administration and management	463	260	203	723	272	451	20,401	8,859	11,542
Business and management, other	1,499	720	779	1,993	814	1,179	11,351	5,957	5,394
Business data processing	1,544	486	1,058	3,213	985	2,228	13,294	5,859	7,435
Secretarial and related programs	3,861	103	3,758	14,015	301	13,714	20,019	255	19,764
Business and office, other	1,220	248	972	3,881	708	3,173	14,877	4,243	10,634
Marketing and distribution	1,747	449	1,298	4,552	986	3,566	16,938	5,007	11,931
Consumer and personal services	750	104	646	4,897	712	4,185	701	406	295
Communications	249	177	72	461	313	148	1,590	893	697
Communications technologies	31	21	10	283	157	126	1,947	1,168	779
Computer and information sciences	897	467	430	1,977	854	1,123	9,098	4,780	4,318
Education	125	16	109	661	99	562	7,309	2,101	5,208
Engineering	51	46	5	113	87	26	4,518	4,042	476
Engineering technologies	6,561	6,086	475	28,297	26,446	1,851	58,191	53,055	5,136
Mechanics and repairers	3,550	3,304	246	12,308	11,699	609	11,023	10,439	584
Construction trades	969	940	29	3,204	3,043	161	2,082	2,007	75
Engineering technologies, other	2,042	1,842	200	12,785	11,704	1,081	45,086	40,609	4,477
Foreign languages	45	18	27	13	2	11	426	231	195
Health sciences	11,406	3,025	8,381	22,310	3,045	19,265	62,545	7,217	55,328
Dental assisting	40	2	38	2,595	95	2,500	4,017	316	3,701
Emergency medical technician–ambulance	1,963	1,396	567	668	446	222	63	50	13
Emergency medical technician–paramedic	602	402	200	454	339	115	307	213	94
Medical lab technician	61	2	59	64	9	55	2,205	417	1,788
Medical assisting	279	7	272	2,094	48	2,046	1,881	36	1,845
Nursing assisting	4,920	455	4,465	1,200	272	928	24	10	14
Practical nursing	444	34	410	8,748	495	8,253	607	38	569
Nursing, general	16	0	16	745	53	692	37,613	2,602	35,011
Health sciences, other	3,081	727	2,354	5,742	1,288	4,454	15,828	3,535	12,293
Home economics	1,419	479	940	3,603	772	2,831	9,311	2,738	6,573
Law	472	59	413	755	115	640	2,501	288	2,213
Letters	52	16	36	14	10	4	508	159	349
Liberal/general studies	650	180	470	907	417	490	108,207	46,389	61,818
Library and archival sciences	23	0	23	63	3	60	117	19	98
Life sciences	223	182	41	6	0	6	907	403	504
Mathematics	5	2	3	19	16	3	667	419	248
Military sciences	0	0	0	959	938	21	50	48	2
Multi/interdisciplinary studies	10	2	8	36	24	12	9,796	4,563	5,233
Parks and recreation	5	2	3	99	48	51	556	282	274
Philosophy and religion	2	0	2	80	56	24	100	64	36
Theology	151	76	75	460	225	235	578	338	240
Physical sciences	13	9	4	107	75	32	2,059	1,252	807
Science technologies	10	8	2	99	70	29	934	563	371
Physical sciences, other	3	1	2	8	5	3	1,125	689	436
Psychology	4	3	1	53	13	40	1,011	291	720
Protective services	3,685	2,978	707	2,141	1,661	480	11,960	8,757	3,203
Criminal justice administration and studies	1,145	931	214	597	421	176	5,803	3,976	1,827
Law enforcement and security services	792	679	113	502	428	74	3,860	2,877	983
Fire control and safety	469	432	37	380	363	17	1,449	1,390	59
Protective services, other	1,279	936	343	662	449	213	848	514	334
Public affairs	2,377	2,018	359	548	280	268	3,553	1,540	2,013
Transportation and material moving	2,304	1,988	316	277	216	61	1,284	1,062	222
Public affairs, other	73	30	43	271	64	207	2,269	478	1,791
Social sciences	35	25	10	127	34	93	2,620	1,111	1,509
Visual and performing arts	1,805	1,430	375	7,962	6,376	1,586	14,560	8,455	6,105
Fine arts, general	4	1	3	47	23	24	1,011	358	653
Graphic arts technician	0	0	0	193	98	95	721	267	454
Precision production	1,680	1,422	258	7,333	6,089	1,244	9,204	6,417	2,787
Visual and performing arts, other	121	7	114	389	166	223	3,624	1,413	2,211
Undistributed	251	72	179	232	70	162	146	117	29

SOURCE: Doctorates Awarded from 1920 to 1971 by Subfield of Doctorate, Sex and Decade, March 1973 and Doctorate Recipients from United States Universities, Summary Reports, 1972-1989, National Research Council

TABLE 3-1

DOCTORATES IN PROFESSIONAL FIELDS BY FIELD AND SEX, 1920 – 1989 (Fiscal Years)

FIELD	Total					Women					% Women				
	'73-82	'83-86	1987	1988	1989	'73-82	'83-86	1987	1988	1989	'73-82	'83-86	1987	1988	1989
PROFESSIONAL FIELDS, TOTAL	15,933	7437	2,063	2,092	2147	3,798	2362	679	672	748	23.8	31.8	32.9	32.1	34.8
BUSINESS ADMINISTRATION, (1)	10,048	3318	980	1,039	1071	1,768	655	229	247	279	17.6	19.7	23.4	23.8	26.1
Accounting (2)		631	161	174	184		154	37	56	60		24.4	23.0	32.2	32.6
Banking & Finance (2)		447	155	148	152		44	28	22	23		9.8	18.1	14.9	15.1
Business Admin & Management (2)		759	224	267	246		121	57	55	51		15.9	25.4	20.6	20.7
Business Economics (2)		103	27	27	27		14	2	2	6		13.6	7.4	7.4	22.2
Marketing Management & Research (2)		402	113	126	132		105	33	32	43		26.1	29.2	25.4	32.6
Business Statistics (2)		27	8	6	15		2	1	1	4		7.4	12.5	16.7	26.7
Operations Research (2)		174	64	50	52		24	11	11	7		13.8	17.2	22.0	13.5
Ogranizational Behavior (2)		247	65	74	94		90	32	33	41		36.4	49.2	44.6	43.6
Business & Management, General		192	75	80	61		32	12	14	17		16.7	16.0	17.5	27.9
Business & Management, Other (2)		336	88	87	108		69	16	21	27		20.5	18.2	24.1	25.0
COMMUNICATIONS, TOTAL (2)	187	1031	309	247	304	33	430	143	96	139	17.6	41.7	46.3	38.9	45.7
Communications Research (2)		250	90	72	83		106	34	24	41		42.4	37.8	33.3	49.4
Journalism (3)	187	78	7	21	15	33	20	3	5	8	17.6	25.6	42.9	23.8	53.3
Radio & Television (2)		79	16	12	29		24	5	2	10		30.4	31.3	16.7	34.5
Communications, General (2)		292	102	70	79		127	44	32	35		43.5	43.1	45.7	44.3
Communications, Other (2)		332	94	72	98		153	57	33	45		46.1	60.6	45.8	45.9
OTHER PROFESSIONAL FIELDS, TOTAL	5,698	3088	774	806	772	1,997	1277	307	329	330	35.0	41.4	39.7	40.8	42.7
Architecture, Environmental Design(4)		122	33	31	43		24	6	6	12		19.7	18.2	19.4	27.9
Home Economics	720	364	67	58	55	623	305	60	49	48	86.5	83.8	89.6	84.5	87.3
Law	248	99	27	33	26	14	5	6	5	5	5.6	5.1	22.2	15.2	19.2
Library & Archival Science	645	248	48	57	63	304	138	38	33	38	47.1	55.6	79.2	57.9	60.3
Public Administration (2)		434	78	92	96		117	19	28	38		27.0	24.4	30.4	39.6
Social Work	1,614	864	214	236	209	795	528	117	140	132	49.3	61.1	54.7	59.3	63.2
Theology	2,080	884	253	250	232	173	128	36	40	38	8.3	14.5	14.2	16.0	16.4
Professional Fields, Other (5)	391	73	54	49	48	88	32	25	28	19	22.5	43.8	46.3	57.1	39.6

(1) Originally "Business & Commerce, Business Administration," changed to "Business Aministration" in 1962, and to "Business Administration and Management" in 1983. (2) Broken out in 1983. (3) Originally "Writing & Journalism." Changed to "Journalism" in 1962.
(4) Dropped in 1962. Added in 1983 as "Architecture and Environmental Design." (5) Added in 1968.

SOURCE: Earned Degrees Conferred Series, National Center for Education Statistics, 1947–48—1988–89; Journal of American Medical Association, Vo. 243, No. 9, March 1980, Vol. 25, December 25, 1981, No. 24, December 24/31, 1982, copyright by the American Medical Association; Review of Legal Education in the United States, Fall 1988, American Bar Association; and personal communication from the Association of American Medical Colleges, American Veterinary Medicine Association, American Optometry Association, American Podiatry Association and the American Pharmaceutical Association, 1989

TABLE 3-2

FIRST PROFESSIONAL DEGREES CONFERRED BY FIELD AND SEX, SELECTED YEARS 1947–48 THRU 1988–89

YEAR	MEDICINE			DENTISTRY			OPTOMETRY			OSTEOPATHY			PODIATRY		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
1947–48	6,714	744	11.1	1,625	37	2.3	1,425	40	2.8						
1949–50	5,612	584	10.4	2,579	18	0.7	1,801	19	1.1	346	19	5.5			
1953–54	6,757	343	5.1	3,102	39	1.3	706	20	2.8	499	10	2.0			
1957–58	6,861	351	5.1	3,065	34	1.1	264	1	0.4	466	6	1.3			
1959–60	7,074	394	5.6	3,247	26	0.8	339	4	1.2	423	8	1.9			
1963–64	7,342	432	5.9	3,196	14	0.4	305	5	1.6	352	4	1.1			
1965–66	7,720	516	6.7	3,264	35	1.1	380	3	0.8	360	5	1.4	136	2	1.5
1970–71	8,986	829	9.2	3,777	46	1.2	531	13	2.4	472	11	2.3	241	5	2.1
1972–73	10,398	939	9.0	5,086	58	1.1	771	20	2.6	523	15	2.9	259	1	0.4
1974–75	12,550	1,654	13.2	4,809	149	3.1	792	40	5.1	665	35	5.3	353	4	1.1
1976–77	13,599	2,611	19.2	5,138	374	7.3	953	105	11.0	852	75	8.8	486	16	3.3
1978–79	14,925	3,452	23.1	5,488	652	11.9	1,046	136	13.0	1,065	167	15.7	572	41	7.2
1979–80	15,046	3,523	23.4	5,321	719	13.5	1,085	170	15.7	1,011	159	15.7	580	73	12.6
1980–81	15,505	3,833	24.7	5,460	788	14.4	1,097	207	18.9	1,145	188	16.4	597	69	11.6
1981–82	15,985	3,991	25.0	5,550	825	14.9	1,113	224	20.1	1,017	186	18.3	599	63	10.5
1982–83	15,728	4,193	26.7	5,371	838	15.6	1,120	246	22.0	1,317	261	19.8	631	79	12.5
1983–84	16,343	4,632	28.3	5,274	1,089	20.6	1,086	262	24.1	1,287	262	20.4	607	77	12.7
1984–85	16,041	4,874	30.4	5,339	1,106	20.7	1,115	303	27.2	1,489	353	23.7	582	118	20.3
1985–86	15,938	4,916	30.8	5,046	1,139	22.6	1,029	285	27.7	1,547	388	25.1	612	124	20.3
1986–87	15,620	5,054	32.4	4,741	1,138	24.0	1,082	385	35.6	1,618	412	25.5	590	122	20.7
1987–88	15,091	4,984	33.0	4,351	1,135	26.1	1,023	351	34.3	1,544	421	27.3	645	150	23.3
1988–89	15,454	5,128	33.2	4,247	1,108	26.1	1,093	410	37.5	1,635	453	27.7	636	149	23.4

YEAR	VET. MEDICINE			LAW			THEOLOGY			CHIROPRACTIC			PHARMACY		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
1947–48	242	13	5.4	10,990	420	3.8									
1949–50	803	12	1.5	14,312	421	2.9	3,221	211	6.6						
1953–54	803	10	1.2	9,298	322	3.5	4,463	119	2.7						
1957–58	809	13	1.6	9,394	272	2.9	4,989	61	1.2						
1959–60	825	18	2.2	9,240	230	2.5	5,184	87	1.7						
1963–64	852	32	3.8	10,679	307	2.9	4,423	65	1.5						
1965–66	922	52	5.6	13,246	470	3.5	4,124	74	1.8						
1970–71	1,252	98	7.8	17,652	1,293	7.3	5,055	118	2.3						
1972–73	1,299	133	10.2	27,484	2,224	8.1	5,291	182	3.4						
1974–75	1,415	225	15.9	29,497	4,455	15.1	5,098	348	6.8						
1976–77	1,586	362	22.8	34,104	7,657	22.5	5,861	554	9.5	1,368	116	8.5	527	145	27.5
1978–79	1,714	496	28.9	35,387	10,084	28.5	6,607	866	13.1	1,779	189	10.6	639	230	36.0
1979–80	1,852	615	33.2	35,855	10,828	30.2	7,012	1,009	14.4	2,061	250	12.1	637	239	37.5
1980–81	1,922	677	35.2	36,661	11,768	32.1	6,898	962	13.9	2,337	389	16.6	664	283	42.6
1981–82	1,886	668	35.4	35,543	11,607	32.7	6,091	1,084	17.8	2,626	469	17.9	625	260	41.6
1982–83	2,012	822	40.9	36,540	13,218	36.2	6,494	1,099	16.9	2,889	581	20.1	705	329	46.7
1983–84	2,138	877	41.0	37,012	13,630	36.8	6,878	1,205	17.5	3,105	704	22.7	709	377	53.2
1984–85	2,178	1,043	47.9	37,491	13,321	35.5	7,221	1,335	18.5	2,661	589	22.1	861	431	50.1
1985–86	2,270	1,079	47.5	35,844	13,970	39.0	7,283	1,418	19.5	3,395	841	24.8	903	471	52.2
1986–87	2,230	1,080	48.4	36,172	14,529	40.2	7,181	1,387	19.3	2,655	673	25.3	861	510	59.2
1987–88	2,235	1,118	50.0	35,469	14,345	40.4	6,474	1,386	21.4	2,632	669	25.4	951	568	59.7
1988–89	2,157	1,176	54.5	35,567	14,519	40.8	6,005	1,366	22.7	2,890	731	25.3	1,074	652	60.7

SOURCE: Earned Degrees Conferred Series, 1983–89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 3-3

FIRST PROFESSIONAL DEGREES BY FIELD, RACIAL GROUP AND SEX, 1989 AND CHANGE FROM 1987

FIELD	TOTAL			White non–Hispanic			Black non–Hispanic			Hispanic			Asian/Pacif Isl			Am Ind/Ala Nat			Foreign		
	Total*	Women	%W	Total	Women	%W	Total	Women	%B	Total	Wom	%H	Total	Wom	%A	Total	Wom	%I	Total	Wom	%F
All Fields 1983	73,136	21,826	30	64,551	16,922	88	2,931	1,159	4.0	1,541	410	2.1	1,456	465	2.0	192	58	0.3	669	132	0.9
All Fields 1985	75,562	24,782	33	61,566	20,051	81	2,837	1,348	3.8	1,882	644	2.5	1,754	646	2.3	244	71	0.3	759	186	1.0
All Fields 1987	71,617	25,095	35	62,688	21,538	88	3,420	1,585	4.8	2,051	748	2.9	2,270	850	3.2	304	121	0.4	884	252	1.2
All Fields 1989	70,758	25,691	36	61,188	21,740	86	3,101	1,493	4.4	2,254	887	3.2	2,967	1,156	4.2	268	119	0.4	980	296	1.4
Dentistry	4,247	1,108	26	3,280	765	77	179	78	4.2	201	67	4.7	418	134	9.8	13	6	0.3	156	58	3.7
Medicine	15,454	5,128	33	12,790	4,064	83	779	399	5.0	565	196	3.7	1,147	405	7.4	61	30	0.4	112	34	0.7
Optometry	1,093	410	38	936	330	86	30	14	2.7	27	15	2.5	79	42	7.2	4	1	0.4	17	8	1.6
Osteopathic Med.	1,635	452	28	1,465	400	90	41	14	2.5	58	19	3.5	55	40	3.4	9	1	0.6	7	3	0.4
Pharmacy	1,074	652	61	735	446	68	51	32	4.7	31	17	2.9	210	130	19.6	2	1	0.2	45	19	4.2
Podiatry	636	149	23	541	114	85	40	19	6.3	15	3	2.4	18	7	2.8	2	0	0.3	20	6	3.1
Veterinary Med.	2,157	1,176	55	2,029	1,105	94	32	21	1.5	44	19	2.0	29	22	1.3	14	6	0.6	9	3	0.4
Chiropractic Med.	2,890	731	25	2,614	656	90	24	9	0.8	73	18	2.5	52	15	1.8	4	0	0.1	123	33	4.3
Law	35,567	14,519	41	31,697	12,668	89	1,586	816	4.5	1,146	510	3.2	793	367	2.2	146	65	0.4	217	53	0.6
Theology	6,005	1,366	23	5,119	1,192	85	339	91	5.6	94	23	1.6	166	19	2.8	13	9	0.2	274	32	4.6
Change From 1987																					
All Fields '89–87	-859	596	1.3	-1500	202	-1.1	-319	-92	-0.4	203	139	0.3	697	306	1.0	-36	-2	0.0	96	44	0.2
Dentistry	-492	-29	2.1	-576	-85	-4.1	-83	-15	-1.3	32	18	1.2	99	33	3.1	0	4	0.0	36	16	1.1
Medicine	25	130	0.8	-347	-70	-2.4	-7	50	-0.1	81	31	0.5	342	134	2.2	-5	0	0.0	-39	-15	-0.3
Optometry	11	25	1.9	-7	12	-1.5	12	4	1.1	-2	6	-0.2	5	1	0.4	0	0	0.0	3	2	0.3
Osteopathic Med.	17	40	2.2	-33	34	-3.0	15	-5	0.9	33	11	2.0	10	26	0.6	-4	-2	-0.3	-4	1	-0.3
Pharmacy	213	142	1.5	204	151	6.8	-61	-43	-8.3	-11	-9	-2.0	100	47	6.8	-4	1	-0.5	-15	-12	-2.8
Podiatry	45	26	2.6	20	16	-3.1	7	4	0.7	4	0	0.5	6	3	0.8	0	0	0.0	8	3	1.1
Veterinary Med.	-73	96	6.1	-23	88	2.0	3	4	0.2	-46	2	-2.0	5	9	0.3	-17	-9	-0.7	5	2	0.2
Chiropractic Med.	397	102	0.1	316	81	-1.7	-2	-1	-0.2	34	7	1.0	22	10	0.6	0	-1	0.0	27	6	0.4
Law	-489	24	0.6	-545	-46	-0.3	-149	-97	-0.4	92	66	0.3	99	66	0.3	-6	-3	0.0	38	-2	0.1
Theology	-513	40	2.4	-491	20	-0.8	-54	7	-0.4	-14	7	-0.1	9	2	0.4	0	8	0.0	37	-4	0.9

* Includes those whose race/ethnicity could not be imputed.

SOURCE: Earned Degrees Conferred Series, 1966-89, National Center for Education Statistics

TABLE 3-4

FIRST-PROFESSIONAL DEGREES BY SEX 1966 - 1989

Year	Total	Men	Women	%W
1966	30,124	28,982	1,142	3.8
1967	31,695	30,401	1,294	4.1
1968	33,939	32,402	1,537	4.5
1969	35,114	33,595	1,519	4.3
1970	34,578	32,794	1,784	5.2
1971	37,946	35,544	2,402	6.3
1972	43,411	40,723	2,688	6.2
1973	50,018	46,489	3,529	7.1
1974	53,816	48,530	5,286	9.8
1975	55,916	48,956	6,960	12.4
1976	62,649	52,892	9,757	15.6
1977	64,359	52,374	11,985	18.6
1978	66,581	52,270	14,311	21.5
1979	68,848	52,652	16,196	23.5
1980	70,131	52,716	17,415	24.8
1981	71,956	52,792	19,164	26.6
1982	72,032	52,223	19,809	27.5
1983	73,136	51,310	21,826	29.8
1984	74,407	51,334	23,073	31.0
1985	75,063	50,455	24,608	32.8
1986	73,910	49,261	24,649	33.4
1987	71,617	46,523	25,094	35.0
1988	70,415	45,288	25,127	35.7
1989	70,758	45,067	25,691	36.3
TOTAL	1,392,419	1,085,573	306,846	22.0

NOTE: First-professional degrees are defined as those that require at least 6 years of college work for completion including 2 years of professional training

TABLE 3-5

ARCHITECTURE AND ENVIRONMENTAL DESIGN DEGREES BY SEX AND LEVEL 1970-71 - 1988-89

YEAR	BACHELORS			MASTERS			DOCTORATES		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1970-71	5,578	667	12.0	1,724	243	14.1	36	3	8.3
1971-72	6,452	775	12.0	1,928	281	14.6	50	7	14.0
1972-73	6,980	923	13.2	2,319	364	15.7	58	4	6.9
1973-74	7,840	1,164	14.8	2,733	502	18.4	69	4	5.8
1974-75	8,238	1,435	17.4	2,953	599	20.3	69	11	15.9
1975-76	9,169	1,757	19.2	3,215	670	20.8	82	13	15.9
1976-77	9,222	1,973	21.4	3,213	724	22.5	73	11	15.1
1977-78	9,266	2,199	23.7	3,121	812	26.0	73	16	21.9
1978-79	9,297	2,401	25.8	3,124	889	28.5	96	22	22.9
1979-80	9,176	2,548	27.8	3,157	900	28.5	79	13	16.5
1980-81	9,455	2,655	28.1	3,153	919	29.1	93	20	21.5
1981-82	9,728	2,903	29.8	3,327	1,085	32.6	80	22	27.5
1982-83	9,823	3,420	34.8	3,357	1,133	33.8	97	23	23.7
1983-84	9,186	3,291	35.8	3,223	1,026	31.8	84	22	26.2
1984-85	9,325	3,306	35.5	3,275	1,127	34.4	89	23	25.8
1985-86	9,119	3,295	36.1	3,260	1,131	34.7	73	17	23.3
1986-87	8,922	3,332	37.3	3,142	1,069	34.0	92	26	28.3
1987-88	8,608	3,329	38.7	3,159	1,117	35.4	98	32	32.7
1988-89	9,191	3,611	39.3	3,378	1,187	35.1	86	23	26.7
TOTALS	164,575	44,984	27.3	56,761	15,778	27.8	1,477	312	21.1

SOURCE: American Institute of Architects, personal communications, October 1989 and January 1991

TABLE 3-6

FULL-TIME ENROLLMENTS IN ARCHITECTURE BY TYPE OF PROGRAM, SEX, MINORITY STATUS AND CITIZENSHIP; FALL 1975, 1985 & 1987-89

Year and Type of Degree Program	Total	Women		Minority		Foreign	
		No.	%	No.	%	No.	%
Non-Accredited Deg*							
1975	14,520	1,923	13.2	1,266	8.7	580	4.0
1985	11,584	3,358	29.0	1,850	16.0	1,041	9.0
1987	10,621	3,067	28.9	1,715	16.1	755	7.1
1988	10,759	3,488	32.4	1,923	17.9		
1989	11,526	3,559	30.9	2,131	18.5		
BA in Architecture (5-Year Program)							
1975	15,289	1,938	12.7	1,338	8.8	3,653	23.9
1985	16,479	4,224	25.6	2,939	17.8	1,972	12.0
1987	17,175	4,654	27.1	3,030	17.6	1,803	10.5
1988	17,527	4,848	27.7	3,534	20.2		
1989	18,021	4,768	26.5	3,753	20.8		
MA in Architecture							
1975	2,754	403	14.6	306	11.1	222	8.1
1985	4,246	1,440	33.9	563	13.3	695	16.4
1987	4,377	1,501	34.3	464	10.6	764	17.5
1988	3,982	1,432	36.0	435	10.9		
1989	4,302	1,500	34.9	474	11.0		

* Baccalaureate in Architecture

TABLE 3-7

AIA MEMBERSHIP BY RACE AND SEX, 1989 & 1991

	Sept 1989		Jan 1991		Change	
	No.	%	No.	%	No.	%
Members of AIA	54,878	100	56,347	100	1469	0.0
Women*	4,494	8.2	4,908	8.7	414	0.5
Minorities*						
Black	547	1.0	598	1.1	51	0.1
Hispanic	952	1.7	1,025	1.8	73	0.1
Indian	51	0.1	64	0.1	13	0.0
Asian	1,748	3.2	1,932	3.4	184	0.2
Other	179	0.3	187	0.3	8	0.0

* Includes only those who indicated sex and/or ethnicity.

FIELDS: Accounting and Business and Management

SOURCE (for both tables): Earned Degrees Conferred, 1971 thru 1989, Center for Education Statistics

TABLE 3-8

DEGREES IN ACCOUNTING BY SEX AND LEVEL OF DEGREE
1971–72 – 1988–89

	BACHELORS			MASTERS			DOCTORS		
		Women			Women			Women	
YEAR	Total	No.	%	Total	No.	%	Total	No.	%
1971-72	24,801	2,494	10.1	1,377	108	7.8	51	0	0.0
1972-73	28,289	3,325	11.8	1,627	141	8.7	83	1	1.2
1973-74	29,770	4,176	14.0	1,806	189	10.5	70	4	5.7
1974-75	31,605	5,665	17.9	2,232	280	12.5	60	4	6.7
1975-76	35,806	7,645	21.4	2,730	478	17.5	55	5	9.1
1976-77	39,183	9,942	25.4	3,278	636	19.4	53	4	7.5
1977-78	40,856	12,047	29.5	3,389	729	21.5	44	3	6.8
1978-79	42,131	13,754	32.6	3,595	833	23.2	52	7	13.5
1979-80	43,556	15,760	36.2	3,496	965	27.6	51	9	17.6
1980-81	43,344	17,046	39.3	3,449	1,034	30.0	56	8	14.3
1981-82	45,542	19,329	42.4	3,246	1,086	33.5	61	8	13.1
1982-83	45,732	20,771	45.4	3,046	1,049	34.4	66	13	19.7
1983-84	47,692	22,416	47.0	3,297	1,207	36.6	53	17	32.1
1984-85	47,005	23,050	49.0	3,207	1,259	39.3	59	13	22.0
1985-86	45,617	22,973	50.4	3,101	1,210	39.0	53	15	28.3
1986-87	43,813	22,546	51.5	2,920	1,195	40.9	61	17	27.9
1987-88	43,813	22,546	51.5	2,920	1,195	40.9	61	17	27.9
1988-89	43,813	22,546	51.5	2,920	1,195	40.9	61	17	27.9
TOTALS	722,368	268,031	37.1	51,636	14,789	28.6	1,050	162	15.4

TABLE 3-9

DEGREES IN BUSINESS MANAGEMENT BY SEX AND LEVEL
1970–71 – 1988–89

	BACHELORS			MASTERS			DOCTORATES		
		Women			Women			Women	
YEAR	Total	No.	%W	Total	No.	%W	Total	No.	%W
1970-71	116,709	10,803	9.3	26,654	1,045	3.9	810	23	2.8
1971-72	123,306	11,966	9.7	30,511	1,207	4.0	902	20	2.2
1972-73	128,244	13,840	10.8	31,239	1,522	4.9	932	53	5.7
1973-74	133,905	17,481	13.1	32,820	2,161	6.6	983	50	5.1
1974-75	135,455	22,223	16.4	36,450	3,080	8.4	1011	41	4.1
1975-76	145,035	28,783	19.8	42,728	4,974	11.6	956	52	5.4
1976-77	152,088	35,583	23.4	46,545	6,664	14.3	869	55	6.3
1977-78	163,274	44,604	27.3	48,661	8,216	16.9	867	72	8.3
1978-79	175,420	53,875	30.7	50,646	9,698	19.1	863	101	11.7
1979-80	189,224	63,883	33.8	55,322	12,355	22.3	796	115	14.4
1980-81	200,876	73,806	36.7	58,018	14,513	25.0	845	125	14.8
1981-82	215,817	84,718	39.3	61,428	17,069	27.8	857	152	17.7
1982-83	220,078	90,606	41.2	65,245	18,838	28.9	809	136	16.8
1983-84	222,753	95,325	42.8	66,594	20,062	30.1	976	201	20.6
1984-85	225,513	100,110	44.4	67,461	20,869	30.9	864	146	16.9
1985-86	230,784	103,947	45.0	66,967	20,795	31.1	965	206	21.3
1986-87	233,719	106,969	45.8	67,353	22,216	33.0	1098	259	23.6
1987-88	235,476	108,087	45.9	69,430	23,246	33.5	1108	255	23.0
1988-89	238,699	109,828	46.0	72,961	24,517	33.6	1150	306	26.6
TOTALS	3,486,375	1,176,437	33.7	997,033	233,047	23.4	17,661	2,368	13.4

FIELD: Accounting

SOURCE: Minority Recruitment and Equal Opportunity Committee Reports, 1981 - 1989, by Sharon L. Donahue, American Institute of Certified Public Accountants

TABLE 3-10

MINORITY CERTIFIED PUBLIC ACCOUNTANTS EMPLOYED IN MAJOR ACCOUNTING FIRMS by MINORITY GROUP and SEX, SELECTED YEARS, 1976–89

	Am. Indian		Asians		Blacks		Hispanics		Total Min		Total Women		Total
YEAR	No.	%AI	No.	%A	No.	%B	No.	%H	No.	%M	No.	%W	Prof.
1976	26	1.2	641	29.6	955	44.2	541	25.0	2,163	3.8	5,783	10.3	56,336
1978	34	1.3	831	32.9	1,042	41.2	620	24.5	2,527	4.3	8,514	14.3	59,352
1980	49	1.6	1,061	35.7	1,204	40.5	662	22.2	2,976	4.4	13,294	19.8	67,005
1981	51	1.5	1,349	39.9	1,193	35.3	788	23.3	3,381	4.6	15,984	21.9	73,046
1982	51	1.4	1,454	40.4	1,185	33.0	905	25.2	3,595	4.7	18,509	24.1	76,670
1983	50	1.4	1,346	37.8	1,132	31.8	1,037	29.1	3,565	4.5	20,850	26.1	79,896
1984	42	1.1	1,567	41.2	1,125	29.6	1,073	28.2	3,807	4.6	22,818	27.3	83,610
1986	44	0.9	2,219	46.0	1,247	25.9	1,311	27.2	4,821	5.2	27,611	30.0	92,150
1987	52	1.0	2,520	47.2	1,358	25.4	1,409	26.4	5,339	5.5	29,695	30.8	96,410
1988	59	1.0	3,029	50.3	1,388	23.1	1,543	25.6	6,019	5.7	33,064	31.5	104,928
1989	71	1.0	3,642	52.9	1,479	21.5	1,699	24.7	6,891	6.1	36,551	32.3	113,234
Totals	529	1.2	19,659	43.6	13,308	29.5	11,588	25.7	45,084	5.0	232,673	25.8	902,637

TABLE 3-11

PLACEMENT OF ACCOUNTING GRADUATES FROM THE TRADITIONALLY BLACK AND MINORITY COLLEGES AND UNIVERSITIES SELECTED YEARS, 1973–88

			Public						Nonprofit		Graduate					
	Total	Total	Accounting		Industry		Government		Org		Schools		Other		Unknown	
Year	Majors	Graduates	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1973	4,003	837	126	15.1	244	29.2	136	16.2	19	2.3	51	6.1	38	4.5	223	26.6
1975	5,936	1,034	170	16.4	306	29.6	158	15.3	26	2.5	94	9.1	34	3.3	246	23.8
1977	7,303	1,061	147	13.9	396	37.3	163	15.4	32	3.0	111	10.5	31	2.9	181	17.1
1979	11,914	1,775	201	11.3	543	30.6	297	16.7	60	3.4	139	7.8	39	2.2	496	27.9
1980	10,851	1,761	180	10.2	544	30.9	252	14.3	64	3.6	118	6.7	58	3.3	545	30.9
1981	10,380	1,555	208	13.4	488	31.4	217	14.0	38	2.4	120	7.7	66	4.2	418	26.9
1982	10,138	1,506	154	10.2	422	28.0	167	11.1	48	3.2	116	7.7	40	2.7	559	37.1
1983	8,757	1,257	147	11.7	370	29.4	219	17.4	46	3.7	125	9.9	37	2.9	313	24.9
1984	11,350	1,658	201	12.1	386	23.3	256	15.4	56	3.4	179	10.8	45	2.7	535	32.3
1985	10,148	1,409	163	11.6	380	27.0	194	13.8	41	2.9	133	9.4	60	4.3	438	31.1
1986	7,288	1,145	98	8.6	294	25.7	166	14.5	34	3.0	114	10.0	39	3.4	400	34.9
1987	10,274	1,506	160	10.6	388	25.8	215	14.3	45	3.0	141	9.4	53	3.5	506	33.6
1988	9,473	1,229	136	11.1	359	29.2	150	12.2	30	2.4	113	9.2	31	2.5	410	33.4
Totals	117,815	17,733	2,091	11.8	5,120	28.9	2,590	14.6	539	3.0	1,554	8.8	571	3.2	5,270	29.7

Source: Minority Recruitment and Equal Opportunity Committee 1984, 1986, 1988 and 1989 Report, American Institute of Certified Public Accountants

TABLE 3-12

MINORITIES AND WOMEN WHO ARE PARTNERS IN MAJOR AND MINORITY ACCOUNTING FIRMS 1978, 1984, AND 1986 – 1989

Year	Blacks	Hisp-anics	Amer. Ind.	Under-Rep Min	Asian	Total Min.	Women	Total Prof.	Percent of Total Professionals: Blacks	Hisp-anics	Amer. Ind.	Under-Rep Min	Asian	Total Min.	Women
MAJOR ACCOUNTING FIRMS															
1978	4	20	4	28	17	45	29	56,336	0.01	0.04	0.01	0.05	0.03	0.08	0.05
1984	23	62	6	91	56	147	146	83,610	0.03	0.07	0.01	0.11	0.07	0.18	0.17
1986	26	88	7	121	80	201	230	92,150	0.03	0.10	0.01	0.13	0.09	0.22	0.25
1987	33	103	7	143	98	241	311	96,410	0.03	0.11	0.01	0.15	0.10	0.25	0.32
1988	37	97	5	139	107	246	403	104,928	0.04	0.09	0.00	0.13	0.10	0.23	0.38
1989	41	96	7	144	113	257	450	113,234	0.04	0.08	0.01	0.13	0.10	0.23	0.40
MINORITY ACCOUNTING FIRMS															
1978	73	55	2	130	5	135	3	668	10.93	8.23	0.30	19.46	0.75	20.21	0.45
1984	78	74	2	154	45	199	13	1,068	7.30	6.93	0.19	14.42	4.21	18.63	1.22
1986	82	47	2	131	47	178	14	930	8.82	5.05	0.22	14.09	5.05	19.14	1.51
1987	81	49	1	131	44	175	25	1,046	7.74	4.68	0.10	12.52	4.21	16.73	2.39
1988	90	47	0	137	44	181	15	1,029	8.75	4.57	0.00	13.31	4.28	17.59	1.46
1989	65	50	0	115	30	145	12	801	8.11	6.24	0.00	14.36	3.75	18.10	1.50

FIELD: Law
SOURCE: Earned Degrees Conferred, 1972 through 1989, National Center for Education Statistics

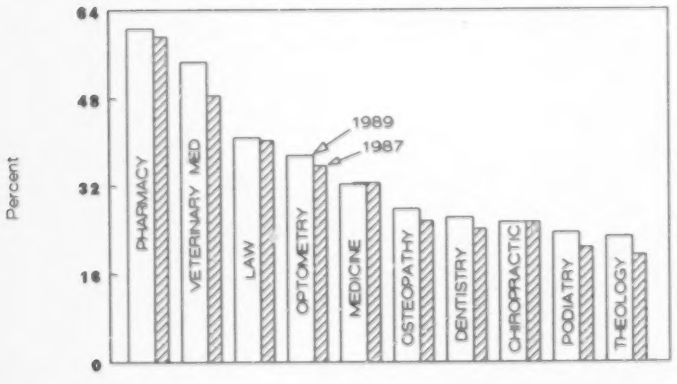
TABLE 3-13

LAW DEGREES BY SEX AND LEVEL OF DEGREE, 1970–71 – 1988–89

	BACHELORS			MASTERS			DOCTORATES			1st PROFESSIONAL		
		Women			Women			Women			Women	
YEAR	Total	No.	%	Total	No.	%	Total	No.	%	Total	No.	%
1970–71	545	27	5.0	955	46	4.8	20	0	0.0	17,652	1,293	7.3
1971–72	503	33	6.6	932	54	5.8	40	1	2.5	22,017	1,545	7.0
1972–73	474	40	8.4	1,071	80	7.5	37	1	2.7	27,484	2,224	8.1
1973–74	494	52	10.5	1,181	84	7.1	27	1	3.7	29,652	3,408	11.5
1974–75	436	62	14.2	1,245	100	8.0	21	0	0.0	29,497	4,455	15.1
1975–76	531	100	18.8	1,442	173	12.0	76	3	3.9	32,535	6,264	19.3
1976–77	559	154	27.5	1,574	208	13.2	60	8	13.3	34,104	7,657	22.5
1977–78	653	187	28.6	1,786	261	14.6	39	5	12.8	34,402	8,945	26.0
1978–79	678	274	40.4	1,647	255	15.5	46	7	15.2	35,387	10,084	28.5
1979–80	683	311	45.5	1,817	286	15.7	40	4	10.0	35,855	10,828	30.2
1980–81	776	388	50.0	1,832	326	17.8	60	4	6.7	36,661	11,768	32.1
1981–82	846	430	50.8	1,892	383	20.2	22	2	9.1	35,543	11,607	32.7
1982–83	1,099	642	58.4	2,091	488	23.3	72	17	23.6	36,540	13,218	36.2
1983–84	1,272	739	58.1	1,802	415	23.0	121	21	17.4	37,012	13,630	36.8
1984–85	1,157	708	61.2	1,796	419	23.3	105	17	16.2	37,491	13,321	35.5
1985–86	1,197	778	65.0	1,924	483	25.1	54	6	11.1	35,844	13,970	39.0
1986–87	1,178	808	68.6	1,943	520	26.8	120	41	34.2	36,172	14,529	40.2
1987–88	1,303	890	68.3	1,880	494	26.3	89	23	25.8	35,469	14,345	40.4
1988–89	1,976	1,191	60.3	2,099	607	28.9	76	30	39.5	35,567	14,519	40.8
TOTALS	16,360	7,814	47.8	30,908	5,682	18.4	1,125	191	17.0	506,278	157,448	31.1

CHART 3-1

PERCENT WOMEN EARNING FIRST PROFESSIONAL DEGREES, 1987 & 1989



Source: NCES Graph by CPST

FIELD: Law

SOURCE: A Review of Legal Education in the United States - Fall 1977 and Fall 1987, American Bar Association Section of Legal Education and Admissions to the Bar, American Bar Association.

TABLE 3-14

FIRST YEAR AND TOTAL ENROLLMENTS IN ABA APPROVED LAW SCHOOLS BY SEX AND ETHNICITY, SELECTED YEARS, 1970 – 1988

Year	Total	Women		Black		Hispanic*		Asian/Pacific Islander		Am. Indian/ Alaskan Native	
		No.	%	No.	%	No.	%	No.	%	No.	%
First Year											
1970	29,128	2,103	7.2	1,115	3.83	309	1.06			44	0.15
1972	36,171	4,326	12.0	1,716	4.74	526	1.45	254	0.70	71	0.20
1974	37,108	7,464	20.1	1,943	5.24	729	1.96	327	0.88	109	0.29
1976	39,038	10,472	26.8	2,045	5.24	818	2.10	436	1.12	118	0.30
1977	39,996	11,354	28.4	2,128	5.32	953	2.38	484	1.21	133	0.33
1978	39,676	11,928	30.1	1,945	4.90	983	2.48	509	1.28	137	0.35
1979	40,479	13,324	32.9	2,021	4.99	1,078	2.66	557	1.38	145	0.36
1980	40,717	13,490	33.1	2,002	4.92	1,075	2.64	577	1.42	171	0.42
1981	42,296	15,272	36.1	2,144	5.07	1,176	2.78	641	1.52	163	0.39
1982	42,521	15,811	37.2	2,238	5.26	1,266	2.98	650	1.53	160	0.38
1983	42,034	16,136	38.4	2,217	5.27	1,319	3.14	731	1.74	154	0.37
1984	41,159	16,049	39.0	2,247	5.46	1,266	3.08	711	1.73	169	0.41
1985	40,747	16,236	39.8	2,214	5.43	1,276	3.13	766	1.88	173	0.42
1986	40,796	16,510	40.5	2,183	5.35	1,369	3.36	799	1.96	183	0.45
1987	40,195	16,491	41.0	2,159	5.37	1,484	3.69	929	2.31	176	0.44
1988	41,055	17,506	42.6	2,339	5.70	1,513	3.69	1,064	2.59	189	0.46
Totals	633,116	204,472	32.3	32,656	5.16	17,140	2.71	9,435	1.49	2,295	0.36
Total Enrollments											
1970	68,386	4,715	6.9	2,128	3.11	548	0.80			72	0.11
1972	94,468	8,914	9.4	3,744	3.96	1,156	1.22	480	0.51	140	0.15
1974	106,102	16,760	15.8	4,817	4.54	1,700	1.60	850	0.80	222	0.21
1976	116,991	26,737	22.9	5,127	4.38	2,182	1.87	1,099	0.94	295	0.25
1977	117,451	29,538	25.1	5,503	4.69	2,461	2.10	1,324	1.13	301	0.26
1978	118,557	32,528	27.4	5,304	4.47	2,531	2.13	1,382	1.17	363	0.31
1979	121,606	36,808	30.3	5,350	4.40	2,788	2.29	1,424	1.17	390	0.32
1980	122,860	38,627	31.4	5,257	4.28	2,817	2.29	1,547	1.26	392	0.32
1981	125,397	42,122	33.6	5,506	4.39	3,014	2.40	1,641	1.31	415	0.33
1982	127,312	44,092	34.6	5,789	4.55	3,189	2.50	1,755	1.38	402	0.32
1983	127,828	47,083	36.8	5,852	4.58	3,406	2.66	1,947	1.52	406	0.32
1984	127,195	41,159	32.4	5,967	4.69	3,496	2.75	1,962	1.54	441	0.35
1985	125,698	48,499	38.6	5,955	4.74	3,507	2.79	2,062	1.64	429	0.34
1986	124,092	49,050	39.5	6,501	5.24	3,679	2.96	2,153	1.74	463	0.37
1987	123,277	49,522	40.2	5,894	4.78	3,865	3.14	2,303	1.87	488	0.40
1988	123,198	50,460	41.0	6,029	4.89	3,018	2.45	2,656	2.16	492	0.40
Totals	1,870,418	566,614	30.3	84,723	4.53	43,357	2.32	24,585	1.31	5,711	0.31

* Excludes University of Puerto Rico

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 3-15

FEDERAL WORKERS EMPLOYED IN LEGAL AND KINDRED OCCUPATIONS BY OCCUPATION TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1990

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
Law Clerk	417	211	50.6	82	19.7	46	56.1	47	11.3	22	5.3	13	3.1	0	0.0	335	80.3
General Attorney	22,064	7,527	34.1	2,310	10.5	1032	44.7	1,415	6.4	566	2.6	274	1.2	55	0.2	19,754	89.5
Administrative Law Judge	1,114	58	5.2	68	6.1	11	16.2	29	2.6	33	3.0	3	0.3	3	0.3	1,046	93.9
Patent Administration	68	7	10.3	6	8.8	2	33.3	3	4.4	1	1.5	2	2.9	0	0.0	62	91.2
Patent Adviser	38	3	7.9	1	2.6	0	0.0	1	2.6	0	0.0	0	0.0	0	0.0	37	97.4
Patent Attorney	223	12	5.4	9	4.0	2	22.2	5	2.2	1	0.4	2	0.9	1	0.4	214	96.0
Patent Classifying	76	13	17.1	17	22.4	7	41.2	8	10.5	1	1.3	7	9.2	1	1.3	59	77.6
Patent Examining	1,843	372	20.2	447	24.3	130	29.1	169	9.2	38	2.1	236	12.9	2	0.1	1,396	75.7
Design Patent Examining	43	20	46.5	12	27.9	6	50.0	8	18.6	1	2.3	3	7.0	0	0.0	31	72.1
TOTALS	25,886	8,223	31.8	2,952	11.4	1236	41.9	1,685	6.5	663	2.6	542	2.1	62	0.2	22,934	88.6

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 4-1

YEARS OF SCHOOL COMPLETED BY PERSONS AGE 18 AND OVER, BY AGE, SEX, AND RACE/ETHNICITY, 1988

[in thousands]

Age, sex, and race	Total population	Elementary level		High school		College		
		Less than 8 years	8 years	1 to 3 years	4 years	1 to 3 years	4 years	5 years or more
1	2	3	4	5	6	7	8	9
Total								
18 and over	177,677	10,876	8,403	22,464	70,194	32,932	19,622	13,188
18 and 19 years old	7,221	88	132	2,610	3,453	935	3	—
20 to 24 years old	18,840	446	312	2,041	7,801	6,213	1,749	277
25 years old and over	151,616	10,341	7,959	17,813	58,940	25,784	17,870	12,911
25 to 29 years old	21,523	502	330	2,205	9,093	4,514	3,483	1,397
30 to 34 years old	21,446	635	288	1,877	8,796	4,554	3,345	1,951
35 to 39 years old	18,854	697	285	1,523	7,162	4,164	2,772	2,251
40 to 49 years old	28,604	1,203	735	2,854	11,345	5,261	3,636	3,571
50 to 59 years old	21,970	1,673	1,285	3,080	8,943	3,047	2,049	1,793
60 to 69 years old	20,595	2,212	1,888	3,309	8,039	2,475	1,499	1,174
70 years old and over	18,724	3,417	3,148	2,967	5,562	1,769	1,086	773
Men								
18 and over	84,776	5,429	3,824	10,724	31,143	15,439	10,311	7,905
18 and 19 years old	3,581	54	79	1,439	1,621	387	1	—
20 to 24 years old	9,254	250	145	1,067	3,848	2,999	786	159
25 years old and over	71,941	5,125	3,600	8,217	25,674	12,053	9,525	7,746
25 to 29 years old	10,669	286	154	1,190	4,375	2,166	1,733	764
30 to 34 years old	10,651	349	115	1,028	4,219	2,112	1,738	1,091
35 to 39 years old	9,321	372	147	705	3,266	2,045	1,497	1,289
40 to 49 years old	13,959	618	377	1,287	4,946	2,516	1,982	2,233
50 to 59 years old	10,485	881	688	1,318	3,757	1,461	1,180	1,199
60 to 69 years old	9,478	1,123	860	1,551	3,159	1,099	909	759
70 years old and over	7,377	1,496	1,239	1,139	1,952	654	486	410
Women								
18 and over	92,902	5,444	4,579	11,743	39,051	17,494	9,308	5,284
18 and 19 years old	3,640	34	53	1,171	1,832	549	1	—
20 to 24 years old	9,586	194	167	974	3,953	3,213	963	119
25 years old and over	79,676	5,216	4,359	9,597	33,266	13,731	8,345	5,165
25 to 29 years old	10,854	216	176	1,015	4,718	2,348	1,750	633
30 to 34 years old	10,795	286	173	849	4,577	2,442	1,607	860
35 to 39 years old	9,533	325	138	818	3,896	2,119	1,275	962
40 to 49 years old	14,645	585	358	1,567	6,399	2,745	1,654	1,338
50 to 59 years old	11,385	792	597	1,762	5,186	1,586	869	594
60 to 69 years old	11,117	1,089	1,008	1,758	4,880	1,376	590	415
70 years old and over	11,347	1,921	1,909	1,828	3,610	1,115	600	363
White								
18 and over	152,644	8,299	7,262	18,119	61,090	28,640	17,402	11,833
18 and 19 years old	5,927	72	95	2,036	2,905	817	3	—
20 to 24 years old	15,625	389	245	1,563	6,390	5,224	1,557	259
25 years old and over	131,092	7,839	6,923	14,520	51,795	22,599	15,842	11,574
25 to 29 years old	18,070	437	269	1,710	7,637	3,764	3,031	1,222
30 to 34 years old	18,078	531	236	1,431	7,415	3,857	2,922	1,686
35 to 39 years old	16,059	582	228	1,142	6,073	3,598	2,421	2,016
40 to 49 years old	24,683	942	595	2,240	9,857	4,624	3,197	3,228
50 to 59 years old	19,001	1,247	1,091	2,465	8,055	2,730	1,824	1,589
60 to 69 years old	18,308	1,550	1,617	2,830	7,465	2,350	1,413	1,085
70 years old and over	16,894	2,552	2,887	2,702	5,294	1,678	1,034	747
Black								
18 and over	19,549	2,067	961	3,877	7,541	3,173	1,227	702
18 and 19 years old	1,043	15	30	486	432	79	—	—
20 to 24 years old	2,576	49	61	424	1,195	712	125	9
25 years old and over	15,930	2,003	870	2,966	5,914	2,382	1,102	693
25 to 29 years old	2,701	26	48	444	1,279	573	254	78
30 to 34 years old	2,571	76	37	397	1,167	532	248	113
35 to 39 years old	2,122	71	38	336	931	432	196	119
40 to 49 years old	2,913	174	119	557	1,216	455	201	190
50 to 59 years old	2,250	345	165	561	706	234	120	118
60 to 69 years old	1,861	575	227	442	421	95	49	52
70 years old and over	1,512	736	236	229	194	61	34	23
Hispanic origin								
18 and over	12,605	3,067	803	2,108	3,854	1,696	702	373
18 and 19 years old	690	45	33	304	260	48	—	—
20 to 24 years old	1,975	247	88	389	780	390	68	12
25 years old and over	9,940	2,775	682	1,415	2,813	1,258	634	361
25 to 29 years old	2,044	327	90	353	701	342	165	55
30 to 34 years old	1,741	359	74	243	538	305	150	70
35 to 39 years old	1,553	372	71	217	495	229	97	73
40 to 49 years old	1,857	519	124	262	553	215	106	79
50 to 59 years old	1,322	498	132	180	297	96	70	50
60 to 69 years old	852	376	98	118	156	55	31	17
70 years old and over	571	324	93	42	74	16	15	8

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 4-2

OCCUPATION OF EMPLOYED PERSONS AGE 16 AND OVER BY YEARS OF SCHOOL COMPLETED AND SEX, MARCH 1988

Sex and occupation	Total employed, in thousands	Percentage distribution, by years of school completed								Median school years completed
		Total	Elementary school		High school		College			
			Less than 8 years [1]	8 years	1 to 3 years	4 years	1 to 3 years	4 years	5 years or more	
1	2	3	4	5	6	7	8	9	10	11
All persons										
All occupational groups	112,565	100.0	2.9	2.3	11.2	39.7	20.5	13.8	9.6	12.8
Managerial and professional specialty	29,007	100.0	0.5	0.4	2.5	17.7	19.3	29.4	30.3	16.3
Executive, administrative, and managerial	13,928	100.0	0.7	0.7	3.7	27.1	23.6	27.5	16.7	14.9
Professional specialty occupations	15,079	100.0	0.2	0.1	1.4	9.0	15.4	31.2	42.7	16.8
Teachers, except college and university	3,981	100.0	0.1	(2)	1.2	6.8	7.8	38.5	45.6	16.9
Teachers, college and university	772	100.0	0.4	(2)	(2)	3.6	9.6	14.0	72.4	18+
Technical, sales, and administrative support	35,267	100.0	0.7	0.7	7.4	44.6	28.2	14.2	4.3	12.9
Technicians and related support	3,506	100.0	0.3	0.1	2.3	29.5	35.6	22.5	9.7	14.4
Sales occupations	13,509	100.0	1.0	1.1	11.1	39.4	24.4	17.8	5.2	12.9
Administrative support, including clerical	18,252	100.0	0.5	0.5	5.7	51.3	29.7	9.9	2.5	12.8
Service occupations	14,809	100.0	5.4	4.4	21.0	45.2	18.0	4.7	1.2	12.4
Precision production, craft, and repair	13,178	100.0	4.4	3.6	14.8	53.4	18.3	4.3	1.2	12.5
Operators, fabricators, and laborers	17,338	100.0	6.7	5.0	21.5	50.9	12.1	3.1	0.7	12.3
Farming, forestry, and fishing	2,966	100.0	13.6	6.6	16.1	43.7	12.4	5.6	1.9	12.3
Men										
All occupational groups	61,538	100.0	3.7	2.7	11.8	37.4	19.1	14.2	11.1	12.9
Managerial and professional specialty	16,120	100.0	0.6	0.5	2.6	15.6	17.2	29.1	34.3	16.5
Technical, sales, and administrative support	12,273	100.0	1.0	0.8	6.9	33.7	28.7	21.4	7.4	13.8
Service occupations	5,800	100.0	6.2	4.1	19.2	41.6	20.6	6.3	2.0	12.5
Precision production, craft, and repair	12,012	100.0	4.3	3.6	14.9	53.6	18.4	4.2	1.1	12.5
Operators, fabricators, and laborers	12,840	100.0	6.2	4.7	21.1	50.2	13.5	3.5	0.7	12.4
Farming, forestry, and fishing	2,493	100.0	14.5	7.1	16.0	43.3	12.0	5.1	1.9	12.3
Women										
All occupational groups	51,027	100.0	2.1	1.8	10.5	42.5	22.3	13.2	7.8	12.8
Managerial and professional specialty	12,887	100.0	0.3	0.2	2.3	20.2	21.9	29.8	25.2	16.2
Technical, sales, and administrative support	22,994	100.0	0.4	0.6	7.7	50.4	28.0	10.3	2.6	12.8
Service occupations	9,009	100.0	4.9	4.6	22.2	47.6	16.4	3.6	0.8	12.4
Precision production, craft, and repair	1,166	100.0	5.3	4.5	14.4	51.2	17.3	5.3	2.0	12.5
Operators, fabricators, and laborers	4,499	100.0	8.1	5.8	22.5	52.8	8.1	2.1	0.5	12.3
Farming, forestry, and fishing	473	100.0	8.9	3.8	16.7	46.1	14.6	8.5	1.5	12.4

[1] Includes persons reporting no school years completed.
[2] Less than .05 percent.

NOTE.—Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Office of Employment and Unemployment Statistics, "Educational Attainment of Workers, March 1988." (This table was prepared December 1988.)

SOURCE: "Hispanics in the U.S. Work Force," Monthly Labor Review, August 1988

TABLE 4-3

HISPANIC EMPLOYMENT AND EDUCATION LEVEL, 1980 AND 1987

	EMPLOYMENT (Numbers in thousands)			EDUCATION LEVEL (Percent of the Population)		
	1980	1987	% Change		Hispanic	Non-Hispanic
Total	5,457	7,790	42.8	TOTAL	100	100
Mexican	3,175	4,690	47.7	< 4 yrs of HS	50	23
Puerto Rican	600	744	24.0	4 yrs of HS	30	42
Cuban	409	518	26.7	1 or more yrs	20	35
Other Hispanic	1,273	1,838	44.4	of College		

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 4-4

YEARS OF SCHOOL COMPLETED BY PERSONS AGE 25 AND OVER AND 25-29, BY RACE, 1910-1988

Race, age, and date	Percent, by years of school completed			Median school years completed
	Less than 5 years of elementary school	4 years of high school or more	4 or more years of college	
1	2	3	4	5
All races				
25 and over				
1910 [1]	23.8	13.5	2.7	8.1
1920 [1]	22.0	16.4	3.3	8.2
1930 [1]	17.5	19.1	3.9	8.4
April 1940	13.7	24.5	4.6	8.6
April 1950	11.1	34.3	6.2	9.3
April 1960	8.3	41.1	7.7	10.5
March 1970	5.3	55.2	11.0	12.2
March 1975	4.2	62.5	13.9	12.3
March 1980	3.4	68.6	17.0	12.5
March 1982	3.0	71.0	17.7	12.6
March 1985	2.7	73.9	19.4	12.6
March 1986	2.7	74.7	19.4	12.6
March 1987	2.4	75.6	19.9	12.7
March 1988	2.4	76.2	20.3	12.7
25 to 29				
April 1940	5.9	38.1	5.9	10.3
April 1950	4.6	52.8	7.7	12.1
April 1960	2.8	60.7	11.0	12.3
March 1970	1.1	75.4	16.4	12.6
March 1975	1.0	83.1	21.9	12.8
March 1980	0.8	85.4	22.5	12.9
March 1982	0.8	86.2	21.7	12.8
March 1985	0.7	86.1	22.2	12.9
March 1986	0.9	86.1	22.4	12.9
March 1987	0.9	86.0	22.0	12.8
March 1988	1.0	85.9	22.7	12.8
White [2]				
25 and over				
April 1940	10.9	26.1	4.9	8.7
April 1950	8.9	36.4	6.6	9.7
April 1960	6.7	43.2	8.1	10.8
March 1970	4.2	57.4	11.6	12.2
March 1975	3.3	64.5	14.5	12.4
March 1980	2.6	70.5	17.8	12.5
March 1982	2.4	72.8	18.5	12.6
March 1985	2.2	75.5	20.0	12.7
March 1986	2.2	76.2	20.1	12.7
March 1987	2.0	77.0	20.5	12.7
March 1988	2.0	77.7	20.9	12.7
White [2] (continued)				
25 to 29				
1920 [1]	12.9	22.0	4.5	8.5
April 1940	3.4	41.2	8.4	10.7
April 1950	3.3	56.3	8.2	12.2
April 1960	2.2	63.7	11.8	12.3
March 1970	0.9	77.8	17.3	12.6
March 1975	1.0	84.4	22.8	12.8
March 1980	0.8	86.9	23.7	12.9
March 1982	0.8	86.9	22.7	12.9
March 1985	0.8	86.8	23.2	12.9
March 1986	0.9	86.5	23.5	12.9
March 1987	0.8	86.3	23.0	12.9
March 1988	1.0	86.6	23.5	12.9
Black and other races [2]				
25 and over				
April 1940	41.8	7.7	1.3	5.7
April 1950	32.6	13.7	2.2	6.9
April 1960	23.5	21.7	3.5	8.2
March 1970	14.7	36.1	6.1	10.1
March 1975	11.7	46.4	9.2	11.4
March 1980	8.8	54.6	11.1	12.2
March 1982	7.4	58.1	12.4	12.3
March 1985	6.0	63.2	15.4	12.4
March 1986	5.5	65.3	15.2	12.4
March 1987	5.1	66.7	15.7	12.4
March 1988	5.1	66.7	16.4	12.5
25 to 29				
1920 [1]	44.6	6.3	1.2	5.4
April 1940	27.0	12.3	1.6	7.1
April 1950	18.1	23.6	2.8	8.7
April 1960	7.2	38.6	5.4	10.8
March 1970	2.2	58.4	10.0	12.2
March 1975	0.7	73.8	15.4	12.6
March 1980	1.0	77.0	15.2	12.7
March 1982	0.7	82.2	15.8	12.8
March 1985	0.5	82.4	16.7	12.8
March 1986	0.9	84.3	16.3	12.8
March 1987	1.1	84.1	16.9	12.8
March 1988	1.2	82.0	18.1	12.6

[1] Estimates based on retrojection, by the Bureau of the Census, of 1940 census data on education by age.

[2] Persons of Hispanic origin are included, as appropriate, in the "white" or in the "black and other races" category.

[3] NOTE.—Data for 1975 and subsequent years are for the noninstitutional population. Some data have been revised from previously published figures.

SOURCE: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population, 1960, Vol. 1; *Current Population Reports*, Series P-20; Series P-19, No. 4; 1960 Census Monograph, "Education of the American Population," by John K. Folger and Charles B. Nam; and unpublished data. (This table was prepared December 1988.)

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 4-5

NUMBER OF PERSONS 18 AND OVER WHO HOLD A BACHELOR'S OR HIGHER DEGREE BY FIELD, SEX, RACE AND AGE, SPRING 1984

[Numbers in thousands]

Field of study	Total	Sex		Race		Age					
		Men	Women	White	Black	18 to 24 years old	25 to 34 years old	35 to 44 years old	45 to 54 years old	55 to 64 years old	65 years old and over
1	2	3	4	5	6	7	8	9	10	11	12
Total population, 18 and over	**170,232**	**80,834**	**89,398**	**147,147**	**18,475**	**28,494**	**40,474**	**30,480**	**22,264**	**22,060**	**26,458**
Number of persons with bachelor's or higher degree	26,381	14,711	11,670	24,036	1,334	2,036	8,595	7,057	3,474	2,812	2,401
Percent of population	15.5	18.2	13.1	16.3	7.2	7.1	21.2	23.2	15.6	12.7	9.1
Agriculture and forestry	427	389	38	419	—	22	155	101	45	70	34
Biology	620	322	298	556	21	52	271	117	77	53	38
Business and management	4,462	3,346	1,116	4,058	238	504	1,490	1,303	581	385	198
Economics	462	391	71	403	23	43	150	118	72	53	24
Education	5,297	1,514	3,783	4,890	347	155	1,466	1,699	743	566	667
Engineering	2,176	2,000	176	1,952	72	286	591	477	322	317	182
English and journalism	1,029	406	623	975	35	97	285	213	146	145	144
Home economics	366	21	345	330	23	9	110	66	25	90	65
Law	928	777	151	860	45	24	273	335	139	93	64
Liberal arts and humanities	2,371	979	1,392	2,215	73	235	784	517	286	227	323
Mathematics and statistics	541	351	190	488	33	35	200	128	90	62	26
Medicine and dentistry	872	707	165	776	32	22	269	251	107	140	81
Nursing, pharmacy, and health technologies	1,151	194	957	997	57	79	433	281	168	110	78
Physical and earth sciences	741	553	188	669	17	60	235	189	113	66	78
Police science and law enforcement	154	113	41	140	14	15	59	71	—	10	—
Psychology	749	294	455	707	27	69	281	198	89	59	53
Religion and theology	467	402	65	445	18	17	114	77	103	59	96
Social sciences	1,764	840	924	1,560	156	134	731	486	143	158	113
Vocational and technical studies	157	142	15	138	15	13	69	26	21	18	10
Other fields	1,647	970	677	1,458	88	155	629	402	204	131	126
	Percentage distribution of degree holders, by field										
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Agriculture and forestry	1.6	2.6	0.3	1.7	—	1.1	1.8	1.4	1.3	2.5	1.4
Biology	2.4	2.2	2.6	2.3	1.6	3.0	3.2	1.7	2.2	1.9	1.6
Business and management	16.9	22.7	9.6	16.9	17.8	24.8	17.3	18.5	16.7	13.7	8.2
Economics	1.8	2.7	0.6	1.7	1.7	2.1	1.7	1.7	2.1	1.9	1.0
Education	20.1	10.3	32.4	20.3	26.0	7.6	17.1	24.1	21.4	20.1	27.8
Engineering	8.2	13.6	1.5	8.1	5.4	14.0	6.9	6.8	9.3	11.3	7.6
English and journalism	3.9	2.8	5.3	4.1	2.6	4.8	3.3	3.0	4.2	5.2	6.0
Home economics	1.4	0.1	3.0	1.4	1.7	0.4	1.3	0.9	0.7	3.2	2.7
Law	3.5	5.3	1.3	3.6	3.4	1.2	3.2	4.7	4.0	3.3	2.7
Liberal arts and humanities	9.0	6.7	11.9	9.2	5.5	11.5	9.1	7.3	8.2	8.1	13.5
Mathematics and statistics	2.1	2.4	1.6	2.0	2.5	1.7	2.3	1.8	2.6	2.2	1.1
Medicine and dentistry	3.3	4.8	1.4	3.2	2.4	1.1	3.1	3.6	3.1	5.0	3.4
Nursing, pharmacy, and health technologies	4.4	1.3	8.2	4.1	4.3	3.9	5.0	4.0	4.8	3.9	3.2
Physical and earth sciences	2.8	3.8	1.6	2.8	1.3	2.9	2.7	2.7	3.3	2.3	3.2
Police science and law enforcement	0.6	0.8	0.4	0.6	1.0	0.7	0.7	1.0	—	0.4	—
Psychology	2.8	2.0	3.9	2.9	2.0	3.4	3.3	2.8	2.6	2.1	2.2
Religion and theology	1.8	2.7	0.6	1.9	1.3	0.8	1.3	1.1	3.0	2.1	4.0
Social sciences	6.7	5.7	7.9	6.5	11.7	6.6	8.5	6.9	4.1	5.6	4.7
Vocational and technical studies	0.6	1.0	0.1	0.6	1.1	0.6	0.8	0.4	0.6	0.6	0.4
Other fields	6.2	6.6	5.8	6.1	6.6	7.6	7.3	5.7	5.9	4.7	5.2

—Data not available or not applicable.

NOTE.—Data are based on sample surveys of the civilian noninstitutional population. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-70, No. 11, "Educational Background and Economic Status: Spring 1984." (This table was prepared October 1987.)

SOURCE: Employment and Earnings, January 1990, Bureau of Labor Statistics

TABLE 4-6

EMPLOYED PERSONS BY DETAILED OCCUPATION, SEX AND RACE, 1990 (Numbers in thousands)

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Total, 16 years and over	117,342	45.2	10.2	7.3
Managerial and Professional Specialty	30,398	45.2	6.1	3.7
Executive, administrative and managerial	14,848	39.8	5.7	4.0
Officials, adminis., publ. admin.	591	43.9	10.1	3.8
Administrators, Protective Services	54	14.6	7.8	2.5
Financial managers	472	42.7	4.0	3.7
Personnel and labor relations mgrs.	128	52.6	6.1	3.7
Purchasing managers	110	25.9	4.7	3.7
Mgrs., market., advertis., & publ. rel.	514	31.0	3.3	2.1
Administrators, education & rel. fields	585	53.4	9.9	4.0
Managers, medicine and health	188	67.6	6.7	3.1
Managers, properties and real estate	451	43.5	6.7	5.3
Management–related occupations	3,908	50.4	7.1	4.0
Accountants and auditors	1,416	48.6	7.5	3.2
Underwriters & other financial officers	103	65.4	7.5	4.2
Other financial officers	685	48.2	5.6	4.5
Management analysts	183	32.8	4.4	3.3
Personnel, training & labor rel. spec.	426	59.6	8.8	4.5
Buyers, wholesale & ret., exc. farm prod.	214	48.8	3.2	2.5
Construction inspectors	61	4.7	5.4	3.2
Inspect. & compliance off., exc. constr.	196	28.1	13.3	6.9
Professional specialty	15,550	50.4	6.6	3.4
Architects	157	20.6	2.1	5.8
Engineers	1,508	7.6	3.6	2.3
Aerospace	112	3.7	3.3	1.2
Chemical	67	15.3	4.6	6.6
Civil	249	5.4	4.2	3.6
Electrical & electronic	571	8.5	3.2	2.2
Industrial	199	11.5	4.9	1.1
Mechanical	310	4.9	3.2	1.6
Mathematical & computer scientists	805	35.7	5.7	3.5
Computer systems analysts & scientists	566	32.4	5.7	3.0
Operations & sys. researchers & analysts	239	41.1	5.8	4.9
Natural scientists	413	26.9	3.9	2.7
Chemists, except biochemists	122	27.8	5.9	5.2
Geologists and geodesists	52	15.4	2.9	0.5
Biological and life scientists	77	34.6	2.9	2.1

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Professional specialty continued				
Health diagnosing occupations	854	16.5	3.2	4.4
Physicians	548	17.9	3.3	5.4
Dentists	170	8.6	4.3	2.9
Health assessment & treating occupations	2,242	84.8	7.3	3.1
Registered nurses	1,599	94.2	7.2	3.0
Pharmacists	174	32.3	4.7	2.2
Dietitians	83	90.8	17.1	5.3
Therapists	324	76.3	6.4	3.0
Inhalation	63	52.5	12.5	2.7
Physical	90	77.3	4.8	6.1
Speech	63	88.6	3.3	0.9
Physicians' assistants	62	26.6	6.9	6.2
Teachers, college and university	709	38.7	4.3	2.4
Teachers, except college and university	3,936	79.3	9.2	3.7
Prekindergarten & kindergarten	431	97.8	10.1	5.3
Elementary school	1,489	84.7	11.0	3.5
Secondary school	1,220	52.6	7.7	3.4
Special education	257	84.4	11.8	2.2
Teachers, other	539	63.6	5.4	4.2
Counselors, educational & vocational	214	60.4	12.0	6.2
Librarians, archivists & curators	212	83.3	7.3	2.2
Librarians	188	87.3	7.6	2.3
Social scientists & urban planners	374	48.6	6.4	2.7
Economists	122	41.3	4.4	3.5
Psychologists	210	54	7.7	2.5
Social, recreation & religious workers	1,043	48.8	12.4	3.6
Social workers	527	68.1	17.6	4.8
Recreational workers	101	74.4	9.8	3.3
Clergy	336	7.8	7.2	1.8
Religious workers, n.e.c.	79	61.9	2.8	3.6
Lawyers and judges	774	22.3	3.2	3.3
Lawyers	741	22.2	3.0	3.4
Writers, artists, entertainers & athletes	1,921	46.0	4.5	3.9
Authors	82	59.2	1.3	0.4
Technical writers	65	48.0	2.3	2.8
Designers	534	51.5	2.8	4.3
Musicians and composers	170	31.5	7.0	5.3
Actors and directors	96	34.6	7.2	3.8

TABLE 4-6 (continued)

EMPLOYED PERSONS BY DETAILED OCCUPATION, SEX AND RACE, 1990 (Numbers in thousands)

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Professional specialty continued				
Painters, sculptors, craft–artists	229	50.7	2.7	3.8
Photographers	112	30.3	4.8	7.6
Editors and reporters	253	49.2	5.6	1.6
Public relations specialists	159	57.1	5.5	1.3
Announcers	51	13.6	9.7	3.7
Athletes	74	19.4	8.7	6.3
Technical, sales and administrative support	36,127	64.9	9.3	5.7
Technicians and related support	3,645	48.2	9.5	4.3
Health technologists & technicians	1,276	82.3	14.6	4.6
Clinical lab technologists & technicians	308	74.4	14.7	4.1
Dental hygienists	80	99.2	1.7	0.9
Health record technologists & technicians	72	91.3	15.5	10.8
Radiologic technicians	124	75.8	10.1	4.3
Licensed practical nurses	414	96.1	19.0	4.4
Engineering. & rel. technol. & technicians	937	19.2	7.7	4.4
Electical & electronic technicians	326	14.2	7.7	6.1
Drafting occupations	296	20.7	6.2	4.3
Surveying and mapping technicians	70	11.0	6.3	5.6
Science technicians	217	29.4	7.5	4.9
Biological technicians	59	37.3	5.7	7.5
Chemical technicians	74	21.7	9.2	3.7
Technicians, except health, engr. & sci.	1,216	38.2	5.9	3.8
Airplane pilots and navigators	109	3.8	0.2	2.7
Computer programmers	561	35.2	5.5	3.2
Legal assistants	210	75.7	7.0	5.0
Sales occupations	14,065	49.3	6.4	5.2
Supervisors and proprietors	3,828	34.8	4.6	5.0
Sales reps., finance & business services	2,371	43.5	4.6	3.4
Insurance sales	535	29.4	5.1	2.8
Real estate sales	772	51.0	3.5	3.4
Securities & financial services sales	302	29.1	2.9	1.1
Advertising & related sales	156	54.2	5.2	3.3
Sales occupations, other business serv.	607	50.9	6.1	4.9
Sales reps., commodities, except retail	1,612	20.4	3.1	3.6
Sales workers, retail & personal services	6,186	67.8	9.2	6.5
Administrative suport, including clerical	18,416	80.0	11.4	6.4
Supervisors	736	58.2	12.6	6.1

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Administrative support, including clerical continued				
General office	446	65.9	12.8	5.3
Financial records processing	82	70.2	4.4	3.9
Supervisors, distr.,sched. & adj. clerks	169	35.1	17.3	9.2
Computer equipment operators	876	64.3	14.2	6.1
Computer operators	870	64.2	14.2	6.0
Secretaries, stenographers & typists	4,788	98.3	8.5	5.0
Secretaries	4,010	99.1	7.3	4.6
Typists	731	95.0	14.8	7.2
Information clerks	1,451	89.6	10.1	7.4
Records processing occupat. exc. financial	851	82.3	14.7	7.5
Financial records processing	2,394	91.0	6.3	5.0
Bookkeepers, accounting & auditing clerks	1,926	91.7	5.1	4.6
Communications equipment operators	210	88.6	17.7	6.4
Mail and message distributing occupations	952	36.5	20.2	7.8
Postal clerks, except mail carriers	313	43.7	30.1	6.8
Mail carriers, postal service	327	26.1	11.2	7.6
Material recording, sched. & distr. clerks	1,745	40.2	12.3	8.4
Dispatchers	189	51.5	9.6	4.4
Production coordinators	196	46.4	8.5	6.1
Traffic, shipping & receiving clerks	550	27.6	14.2	11.6
Stock & inventory clerks	561	41.2	13.2	8.2
Meter readers	50	17.1	18.1	2.6
Weighers, measurers and checkers	76	46.6	9.2	6.9
Expediters	96	67.5	9.0	9.0
Adjusters & investigators	1,079	74.0	12.1	6.0
Insurance adjust., examin. & investigators	325	72.0	12.0	4.6
Investigators & adjusters, exc. insurance	546	75.6	12.3	6.5
Eligibility clerks, social welfare	72	84.5	11.1	7.8
Bill & account collectors	136	67.0	11.9	6.2
Miscellaneous administrative support	3,269	85.2	14.2	7.2
General office clerks	810	81.9	12.8	7.1
Bank tellers	503	91.0	9.9	6.9
Data entry keyers	414	87.8	20.2	8.5
Statistical clerks	86	79.7	14.2	4.2
Teachers' aides	440	95.1	16.0	9.3
Service occupations	15,556	60.4	17.6	10.8
Private household	872	95.9	25.1	15.8
Child care workers	358	97.1	8.7	10.0
Cleaning and servants	464	94.9	36.5	19.5

TABLE 4-6 (continued)

EMPLOYED PERSONS BY DETAILED OCCUPATION, SEX AND RACE, 1990 (Numbers in thousands)

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Service occupations continued				
Protective service	1,960	15.6	16.8	5.8
Supervisors, protective service	169	8.3	12.2	2.8
Firefighting & fire prevention	208	3.9	11.7	4.0
Police & dectectives	803	12.6	15.1	4.9
Police & detectives, public service	461	10.2	13.1	4.7
Sheriffs, bailiffs & oth law enforc off.	112	12.8	7.3	4.5
Correctonal institution officers	230	17.4	22.8	5.5
Guards	781	23.3	20.8	7.8
Service occupations, except private household and protective service	12,724	64.8	17.2	11.3
Food preparation & service occupations	5,351	60.3	12.5	12.0
Supervisors	356	69.8	12.3	8.9
Bartenders	322	50.6	3.4	6.1
Waiters & waitresses	1,389	80.8	4.7	7.6
Cooks, except short order	1,713	49.4	18.2	14.2
Food counter, fountain & related occup.	354	72.7	10.5	9.6
Health service occupations	2,042	90.0	26.4	6.5
Dental assistants	187	98.9	7.4	9.0
Health aides, except nursing	416	84.5	17.4	7.0
Nursing aides, orderlies & attendants	1,439	90.4	31.4	6.0
Cleaning & building service occupations	2,997	42.7	22.9	15.8
Supervisors	154	38.4	24.1	13.2
Maids & handymen	646	83.6	26.7	17.2
Janitors & cleaners	2,148	31.6	21.8	15.7
Personal service occupations	2,333	81.8	12.4	7.9
Barbers	81	17.1	15.6	9.2
Hairdressers & cosmetologists	736	89.3	9.0	7.9
Attendants, amusement & recr. facilities	133	47.9	10.0	5.5
Public transportation attendants	86	83.0	14.7	3.2
Welfare service aides	95	89.8	28.3	8.7
Child care workers	861	96.3	12.4	7.9
Precision production, craft & repair	13,818	8.6	7.9	8.5
Mechanics & repairers	4,550	3.4	7.7	7.4
Supervisors	285	7.1	5.9	3.9
Mechanics & repairers, except supervisors	4,156	3.1	7.8	7.7
Vehicle & mob. equip. mechs. & repairers	1,793	0.8	7.2	9.3
Automobile mechanics	880	0.7	8.2	11.6
Bus, truck & stationery engine mechs.	320	0.3	6.5	6.4
Precision production, craft & repair continued				
Aircraft engine mechanics	122	2.6	9.2	7.5
Small engine repairers	65	1.2	3.0	3.2
Automobile body & related repairers	191	0.8	5.2	9.4
Heavy equipment mechanics	160	0.1	6.4	6.5
Industrial machinery repairers	539	3.0	8.4	7.4
Electrical & electronic equip. repairers	680	7.7	9.6	6.0
Electronic rep. commun. & indus. equip.	165	6.7	9.0	8.2
Data processing equipment repairers	152	8.6	11.7	4.5
Telephone line installers & repairers	54	4.2	7.3	5.9
Telephone installers & repairers	193	10.8	8.1	4.5
Heating, air cond. & refrig. mechanics	279	0.5	6.0	4.7
Miscellaneous mechanics & repairers	948	5.0	7.8	6.8
Construction trades	5,142	2.1	7.2	8.8
Supervisors	662	1.9	4.4	6.2
Construction trades except supervisors	4,479	2.1	7.6	9.2
Brickmasons and stonemasons	219	0.6	15.6	5.8
Tile setters, hard and soft	57	0.6	4.9	14.5
Carpet installers	109	1.3	5.9	9.5
Carpenters	1,369	1.2	5.4	8.7
Drywall installers	155	1.6	3.8	17.7
Electricians	702	1.8	7.0	5.3
Painters, construction and maintenance	543	6.0	9.1	13.2
Plumbers, pipefitters and steamfitters	456	0.8	6.9	5.3
Roofers	178	0.6	11.1	12.4
Extractive occupations	138	2.6	6.2	7.3
Precision production occupations	3,988	23.2	9.0	9.4
Supervisors	1,353	14.7	8.1	7.7
Precision metalworking	911	6.4	6.0	7.1
Tool and die makers	148	2.6	4.9	3.6
Machinists	479	4.2	5.4	7.1
Precious stones & metals workers	52	33.1	3.1	18.2
Sheet-metal workers	141	6.9	8.7	7.2
Precision woodworking occupations	95	13.9	5.2	10.4
Cabinet makers & bench carpenters	56	4.8	1.1	12.2
Prec. textile, apparel & furnishing mach.	277	57.9	10.0	12.9
Dressmakers	117	94.4	9.7	6.8
Tailors	60	41.4	7.7	21.3
Upholsters	71	24.0	7.7	17.5
Precision workers, assorted materials	565	54.7	9.6	12.3
Optical goods workers	80	61.4	3.0	9.8

TABLE 4-6 (continued)

EMPLOYED PERSONS BY DETAILED OCCUPATION, SEX AND RACE, 1990 (Numbers in thousands)

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Precision production, craft & repair continued				
Dental lab. & medical appl. technicians	51	27.0	7.3	3.1
Electrical & electronic equip. assemblers	316	67.5	12.9	14.8
Precision food production occupations	414	34.5	16.5	16.0
Butchers and meat cutters	266	26.7	19.0	17.3
Bakers	113	44.0	12.8	12.6
Prec. inspectors, testers & rel. workers	125	24.6	8.8	7.0
Inspectors, testers and graders	113	23.9	9.1	6.5
Plant and system operators	249	5.0	11.7	6.1
Water & sewage treatment plant operators	55	5.9	9.3	3.5
Stationary engineers	109	3.6	10.2	9.0
Operators, fabricators and laborers	180,022	26	15.1	11.4
Machine operators, assemblers & inspectors	8,248	40.9	14.6	13.6
Machine oper. & tenders except precision	5,381	41.7	15.4	14.3
Metalwork. & plastic working machine op.	470	18.2	9.7	10.3
Metal & plastic processing machine op.	160	23.9	16.2	10.3
Woodworking machine operators	165	14.1	15.7	5.0
Printing machine operators	74	27.4	7.5	9.2
Textile, apparel & furnishings mach. op.	1,356	78.3	20.7	3.0
Machine operators, assorted materials	2,736	32.9	15.0	14.7
Fabricators, assemblers & hand working occ.	2,011	33.5	13.0	12.7
Production insp., test, samplers & examin.	856	52.6	13.4	11.0
Transportation & material moving occupations	4,886	9.2	14.6	7.6
Motor vehical operators	3,602	11.2	14.7	7.8
Supervisors	79	15.9	9.1	7.0
Truck drivers, heavy	11,850	1.9	14.2	6.5
Truck drivers, light	766	8.9	12.0	9.3
Drivers–sales workers	192	6.4	5.4	7.0
Bus drivers	440	54.8	22.6	5.4
Taxi–cab drivers & chauffeurs	220	13.1	20.1	18.1
Transportaton occ., except motor vehicles	177	2.7	8.3	3.8
Rail transportation occupations	129	2.8	10.7	3.0
Material moving equipment operators	1107	3.8	15.2	7.5
Operating engineers	220	1.3	10.2	3.7
Crane and tower operators	99	0.8	18.2	2.6
Excavating and loading machine operators	128	0.8	7.5	3.6
Grader, dozer & scraper operators	96	1.3	9.1	6.4
Industrial truck & tractor equipment op.	452	5.6	21.2	10.7
Handlers, equipment cleaners, helpers and laborers	4,888	17.9	16.4	11.6
Helpers, construction & extractive occup.	133	4.4	13.0	14.6
Helpers, construction trades	123	4.1	13.0	15.6
Construction laborers	755	3.0	15.5	15.1
Production helpers	82	26.8	12.5	16.7
Freight, stock & material handlers	1,743	17.3	16.9	8.8
Garbage collectors	50	4.1	38.1	8.4
Stock handlers and baggers	900	23.2	12.9	7.6
Machine feeders and offbearers	91	31.9	18.1	62.0
Garage & service station rel. occupations	230	5.5	11.6	10.0
Vehicle washers and equipment cleaners	281	12.7	22.5	18.9
Hand packers and packagers	327	64.1	14.9	14.1
Laborers, except construction	1,288	20.4	16.3	10.8
Farming, forestry and fishing	3,421	16.5	6.1	13.9
Farm operators and managers	1,269	15.4	0.8	1.7
Farmers	1,118	15.3	0.7	1.3
Farm managers	150	15.7	1.7	4.6
Other agricultural and related occupations	1,976	18.1	9.2	22.0
Farm occupations, except managerial	964	23.0	8.1	26.1
Farm workers	893	22.9	8.2	26.1
Related agricultural occupations	1,012	13.5	10.3	18.1
Supervisors	73	6.0	6.7	11.0
Groundskeepers & gardeners, except farm	816	6.1	11.0	19.8
Animal caretakers, except farm	104	65.2	7.8	4.0
Forestry and logging occupations	118	6.2	11.8	11.1
Timber cutting and logging	82	1.6	15.3	1.8
Fishers, hunters and trappers	59	7.0	5.2	7.6

Notes: Sum of occupation subsets rarely total because occupations with fewer than 50,000 employees usually are not listed.

SOURCE: Bureau of Labor Statistics

TABLE 4-7

EMPLOYED PROFESSIONALS BY DETAILED OCCUPATION, SEX, RACE AND HISPANIC ORIGIN, 1989

[Numbers in thousands]

	EMPLOYED											
	TOTAL			WHITE			BLACK			HISPANIC ORIGIN		
	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
ANNUAL AVERAGE												
MATHEMATICAL & COMPUTER SCIENTISTS	853	548	304	757	486	271	48	28	20	30	17	13
COMPUTER SYSTEMS ANALYSTS & SCIENTISTS	566	383	184	501	338	162	32	19	13	17	13	4
OPERATIONS & SYS RESEARCHERS & ANALYSTS	239	141	98	215	126	89	14	9	5	12	5	7
ACTUARIES	16	9	7	14	7	7	0	0	0	0	0	0
STATISTICIANS	25	12	13	22	11	11	2	0	2	1	0	1
MATHEMATICAL SCIENTISTS, N.E.C.	7	4	2	5	3	2	0	0	0	0	0	0
NATURAL SCIENTISTS	413	302	111	372	276	96	16	9	7	11	7	4
PHYSICISTS & ASTRONOMERS	28	26	2	27	25	2	0	0	0	1	1	0
CHEMISTS, EXCEPT BIOCHEMISTS	122	88	34	105	77	28	7	5	2	6	4	3
ATMOSPHERIC & SPACE SCIENTISTS	9	7	2	8	6	2	0	0	0	0	0	0
GEOLOGISTS & GEODESISTS	52	44	8	49	42	8	2	1	0	0	0	0
PHYSICAL SCIENTISTS, N.E.C.	22	16	5	20	15	5	1	1	0	1	0	0
AGRICULTURAL & FOOD SCIENTISTS	23	15	8	20	14	7	1	0	1	0	0	0
BIOLOGICAL & LIFE SCIENTISTS	77	50	26	68	45	23	2	0	2	2	1	0
FORESTRY & CONSERVATION SCIENTISTS	35	31	5	35	30	5	1	0	0	1	0	0
MEDICAL SCIENTISTS	46	25	21	40	22	17	3	1	2	1	0	0
TEACHERS, COLLEGE & UNIVERSITY	709	435	275	629	382	247	30	17	14	17	9	8
EARTH,ENVIRON,& MARINE SCI TEACHERS	5	4	1	5	4	1	0	0	0	0	0	0
BIOLOGICAL SCIENCE TEACHERS	19	12	7	17	11	6	0	0	0	0	0	0
CHEMISTRY TEACHERS	12	11	2	11	10	1	0	0	0	1	0	0
PHYSICS TEACHERS	11	11	0	10	10	0	0	0	0	0	0	0
NATURAL SCIENCE TEACHERS, N.E.C.	1	1	0	1	1	0	0	0	0	0	0	0
PSYCHOLOGY TEACHERS	18	12	6	17	11	6	0	0	0	0	0	0
ECONOMICS TEACHERS	16	13	3	13	11	2	1	0	0	1	1	0
HISTORY TEACHERS	12	12	1	11	11	1	1	1	0	0	0	0
POLITICAL SCIENCE TEACHERS	13	10	3	11	8	3	0	0	0	0	0	0
SOCIOLOGY TEACHERS	7	5	2	6	5	1	0	0	0	0	0	0
SOCIAL SCIENCE TEACHERS, N.E.C.	5	3	1	4	3	1	0	0	0	0	0	0
ENGINEERING TEACHERS	28	25	3	24	21	2	0	0	0	0	0	0
MATHEMATICAL SCIENCE TEACHERS	54	38	17	48	33	14	2	1	1	1	1	0
COMPUTER SCIENCE TEACHERS	22	16	6	16	11	5	2	1	0	0	0	0
MEDICAL SCIENCE TEACHERS	13	9	4	12	9	4	0	0	0	0	0	0
HEALTH SPECIALTIES TEACHERS	34	11	24	31	9	22	3	2	1	1	0	1
BUS, COMMERCE, & MARKETING TEACHERS	31	20	11	28	18	10	1	1	1	0	0	0
AGRICULTURE & FORESTRY TEACHERS	5	5	0	5	5	0	0	0	0	0	0	0
ART, DRAMA, & MUSIC TEACHERS	45	24	21	42	23	19	2	0	1	1	1	1
PHYSICAL EDUCATION TEACHERS	11	6	5	11	6	5	0	0	0	0	0	0
EDUCATION TEACHERS	11	7	5	11	6	5	0	0	0	0	0	0
ENGLISH TEACHERS	54	22	32	48	20	28	2	0	2	1	0	1
FOREIGN LANGUAGE TEACHERS	22	8	13	20	8	12	1	0	1	2	1	2
LAW TEACHERS	10	7	3	8	5	3	1	1	0	0	0	0
SOCIAL WORK TEACHERS	1	0	1	1	0	1	0	0	0	0	0	0
THEOLOGY TEACHERS	11	8	3	11	8	3	0	0	0	0	0	0
TRADE & INDUSTRIAL TEACHERS	3	2	1	3	2	1	0	0	0	0	0	0
HOME ECONOMICS TEACHERS	3	0	3	3	0	3	0	0	0	0	0	0
TEACHERS, COLLEGE & UNIVERSITY,NEC	7	5	2	6	5	2	1	0	0	1	1	0
COL & UNIV TEACHER,SUBJECT NOT SPEC	227	129	97	195	109	87	12	7	5	7	3	4
TEACHERS, EXCEPT COLLEGE & UNIVERSITY	3936	1052	2884	3488	955	2533	361	75	286	144	44	99
PREKINDER & KINDERGARTEN TEACHERS	431	10	421	372	9	362	44	0	43	23	2	21
ELEMENTARY SCHOOL TEACHERS	1489	227	1262	1297	200	1097	164	24	140	52	10	41
SECONDARY SCHOOL TEACHERS	1220	579	641	1107	531	576	94	37	57	41	17	24
SPECIAL EDUCATION TEACHERS	257	40	217	218	36	182	30	2	28	6	1	5
TEACHERS, N.E.C.	539	196	343	494	178	316	29	12	17	23	14	9
COUNSELORS, EDUCATIONAL & VOCATIONAL	214	85	129	192	73	109	26	8	17	13	6	7
LIBRARIANS, ARCHIVISTS, & CURATORS	212	35	177	192	32	160	16	2	13	5	0	4
LIBRARIANS	188	24	165	170	21	149	14	2	13	4	0	4
ARCHIVISTS & CURATORS	24	12	12	22	11	11	1	1	1	0	0	0

SOURCE: Bureau of Labor Statistics Current Population Survey

TABLE 4-7 (continued)

EMPLOYED PROFESSIONALS BY DETAILED OCCUPATION, SEX, RACE AND HISPANIC ORIGIN, 1989

[Numbers in thousands]

ANNUAL AVERAGE DETAILED OCCUPATIONS	EMPLOYED											
	TOTAL			WHITE			BLACK			HISPANIC ORIGIN		
	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
TOTAL, 16 YEARS AND OVER	117342	64315	53027	101584	56352	45232	11953	5928	6025	8573	5172	3401
MANAGERIAL & PROFESSIONAL SPECIALTY OCCUPATIONS	30398	16652	13746	27459	15280	12179	1862	770	1092	1126	617	510
EXECUTIVE, ADMINISTRATIVE, & MANAGERIAL	14848	8944	5904	13555	8291	5264	840	397	443	599	352	247
LEGIS, CHIEF EXECS & GENERAL ADMIN, PUB ADMIN	35	25	10	31	23	9	3	2	1	1	1	0
OFFICIALS & ADMINISTRATORS, PUBLIC ADMIN	519	291	228	454	261	193	52	24	28	20	11	8
ADMINISTRATORS, PROTECTIVE SERVICES	54	46	8	49	43	6	4	3	1	1	1	0
FINANCIAL MANAGERS	472	271	202	443	258	185	19	7	12	17	9	8
PERSONNEL & LABOR RELATIONS MANAGERS	128	61	67	118	57	61	8	2	5	5	2	3
PURCHASING MANAGERS	110	81	28	100	73	26	5	4	1	4	3	1
MANAGERS, MARKETING, ADVERTISING, & PUB REL	514	355	159	487	336	151	17	12	5	11	8	3
ADMINISTRATORS, EDUCATION & RELATED FIELDS	585	272	312	513	246	267	58	22	36	23	7	16
MANAGERS, MEDICINE & HEALTH	188	61	127	170	55	115	13	4	9	6	2	4
MANAGERS, PROPERTIES & REAL ESTATE	451	255	196	409	230	178	30	18	12	24	17	7
POSTMASTERS & MAIL SUPERINTENDENTS	32	17	15	30	17	14	1	1	0	0	0	0
FUNERAL DIRECTORS	45	41	4	40	36	4	5	5	1	0	0	0
MANAGERS & ADMINISTRATORS, N.E.C.	7807	5231	2576	7231	4884	2347	350	199	150	330	220	110
MANAGEMENT-RELATED OCCUPATIONS	3908	1937	1971	3479	1771	1708	276	94	182	157	69	88
ACCOUNTANTS & AUDITORS	1416	728	688	1215	642	574	107	39	68	45	24	21
UNDERWRITERS	103	36	67	93	33	60	8	2	6	4	2	3
OTHER FINANCIAL OFFICERS	685	355	331	629	336	292	38	11	27	31	12	19
MANAGEMENT ANALYSTS	183	123	60	172	117	55	8	4	4	6	4	3
PERSONNEL, TRAINING & LABOR RELATIONS SPEC	426	172	254	380	160	220	37	10	28	19	4	15
PURCHASING AGENTS & BUYERS, FARM PRODUCTS	10	10	0	10	10	0	0	0	0	0	0	0
BUYERS, WHSALE & RETAIL TRADE, EX FARM PROD	214	110	105	201	105	97	7	3	4	5	3	2
PURCHASING AGENTS & BUYERS, N.E.C.	249	141	108	231	132	98	12	5	7	12	4	8
BUSINESS & PROMOTION AGENTS	21	11	10	20	11	9	1	0	1	1	1	0
CONSTRUCTION INSPECTORS	61	58	3	54	52	2	3	3	0	2	2	0
INSPECTORS & COMPLIANCE OFFICERS, EX CONS	196	141	55	165	126	40	26	12	14	13	11	3
MANAGEMENT RELATED OCCUPATIONS, N.E.C.	343	53	290	308	47	261	28	5	23	17	2	15
PROFESSIONAL SPECIALTY	15550	7708	7842	13903	6988	6915	1022	373	649	527	265	262
ENGINEERS, ARCHITECTS, & SURVEYORS	2005	1834	171	1817	1669	148	70	59	12	52	45	7
ARCHITECTS	157	125	32	143	113	30	3	2	1	9	7	2
ENGINEERS	1823	1686	138	1652	1535	118	65	54	11	42	37	5
AEROSPACE ENGINEERS	112	108	4	104	101	3	4	3	1	1	1	0
METALLURGICAL & MATERIALS ENGINEERS	24	23	1	22	21	1	0	0	0	0	0	0
MINING ENGINEERS	4	4	1	4	4	0	1	0	1	0	0	0
PETROLEUM ENGINEERS	21	19	2	21	19	2	0	0	0	1	1	0
CHEMICAL ENGINEERS	67	56	10	61	52	9	3	2	1	4	3	2
NUCLEAR ENGINEERS	10	10	1	9	8	1	0	0	0	0	0	0
CIVIL ENGINEERS	249	236	14	225	213	12	10	10	0	9	8	1
AGRICULTURAL ENGINEERS	3	3	0	3	3	0	0	0	0	0	0	0
ELECTRICAL & ELECTRONIC ENGINEERS	571	522	48	509	469	40	18	14	4	13	12	1
INDUSTRIAL ENGINEERS	199	176	23	182	162	20	10	8	1	2	2	0
MECHANICAL ENGINEERS	310	295	15	282	269	13	10	8	2	5	4	1
MARINE ENGINEERS & NAVAL ARCHITECTS	16	16	0	15	15	0	0	0	0	0	0	0
ENGINEERS, N.E.C.	238	219	19	215	198	17	8	8	1	7	6	0
SURVEYORS & MAPPING SCIENTISTS	24	24	0	22	21	0	2	2	0	1	1	0

SOURCE: Bureau of Labor Statistics

TABLE 4-7 (continued)

EMPLOYED PROFESSIONALS BY DETAILED OCCUPATION, SEX, RACE AND HISPANIC ORIGIN, 1989

[Numbers in thousands]

	EMPLOYED											
	TOTAL			WHITE			BLACK			HISPANIC ORIGIN		
	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
ANNUAL AVERAGE												
SOCIAL SCIENTISTS & URBAN PLANNERS	374	192	182	341	174	167	24	13	10	10	5	5
ECONOMISTS	122	72	51	114	69	45	5	2	3	4	2	2
PSYCHOLOGISTS	210	96	113	190	84	106	16	10	6	5	2	3
SOCIOLOGISTS	4	2	1	4	2	1	0	0	0	0	0	0
SOCIAL SCIENTISTS, N.E.C.	17	8	9	15	7	8	1	1	0	0	0	0
URBAN PLANNERS	21	14	7	18	11	6	1	0	1	0	0	0
SOCIAL,RECREATION,& RELIGIOUS WORKERS	1043	534	509	886	462	423	129	54	75	37	18	19
SOCIAL WORKERS	527	168	359	421	135	286	93	26	67	25	11	14
RECREATION WORKERS	101	26	75	88	21	67	10	4	6	3	1	2
CLERGY	336	310	26	302	278	23	24	22	2	6	6	0
RELIGIOUS WORKERS, N.E.C.	79	30	49	76	28	48	2	2	0	3	1	2
LAWYERS & JUDGES	774	601	173	733	578	155	25	14	11	26	17	9
LAWYERS	741	576	165	702	555	147	23	12	10	25	17	9
JUDGES	33	25	8	31	23	8	2	2	0	0	0	0
WRITERS, ARTISTS, ENTERTAINERS, & ATHLETES	1921	1036	885	1786	960	826	87	50	37	75	50	25
AUTHORS	82	34	49	80	32	48	1	1	0	0	0	0
TECHNICAL WRITERS	65	34	31	62	32	30	1	0	1	2	0	2
DESIGNERS	534	259	275	499	239	260	15	10	5	23	11	12
MUSICIANS & COMPOSERS	170	116	53	155	105	49	12	9	3	9	9	0
ACTORS & DIRECTORS	96	62	33	86	58	29	7	4	3	4	3	1
PNTRS,SCLPTORS,CRAFT-ART,ART PRINTMAKERS	229	113	116	219	105	114	6	5	1	9	8	1
PHOTOGRAPHERS	112	78	34	103	71	32	5	3	2	9	7	1
DANCERS	14	2	12	12	1	10	2	0	2	1	0	0
ARTISTS,PERFORMERS,RELATED WORKERS,N.E.C.	81	37	44	75	34	41	2	1	1	7	3	3
EDITORS & REPORTERS	253	129	125	234	124	110	14	4	10	4	1	3
PUBLIC RELATIONS SPECIALISTS	159	68	91	149	66	83	9	2	7	2	2	1
ANNOUNCERS	51	44	7	46	40	6	5	4	1	2	1	0
ATHLETES	74	60	14	66	53	14	6	6	0	5	5	0
HEALTH DIAGNOSING OCCUPATIONS	854	713	141	754	632	122	27	23	4	38	31	7
PHYSICIANS	548	450	98	470	387	84	18	16	2	29	24	6
DENTISTS	170	155	15	155	144	12	7	7	1	5	5	0
VETERINARIANS	43	34	9	41	31	9	1	0	0	0	0	0
OPTOMETRISTS	26	22	4	25	22	3	1	0	0	0	0	0
PODIATRISTS	16	12	4	14	10	4	0	0	0	1	0	1
HEALTH DIAGNOSING PRACTITIONERS, N.E.C.	51	40	12	48	38	10	0	0	0	2	2	0
HEALTH ASSESSMENT & TREATING OCCUPATIONS	2242	340	1902	1967	309	1658	163	21	142	69	14	55
REGISTERED NURSES	1593	92	1507	1396	83	1313	116	6	110	48	4	44
PHARMACISTS	174	118	56	154	108	46	8	4	4	4	1	2
DIETICIANS	83	8	75	65	5	60	14	3	11	4	2	3
THERAPISTS	324	77	247	295	70	225	21	5	15	10	4	6
INHALATION THERAPISTS	63	30	33	54	28	26	8	2	6	2	1	0
OCCUPATIONAL THERAPISTS	42	1	42	41	1	40	1	0	1	0	0	0
PHYSICAL THERAPISTS	90	20	69	82	19	64	4	1	3	5	1	4
SPEECH THERAPISTS	63	7	56	59	7	52	2	0	2	1	0	0
THERAPISTS, N.E.C.	66	18	47	59	16	43	6	2	4	2	1	0
PHYSICIANS ASSISTANTS	62	46	17	57	43	14	4	3	2	4	3	1
TECHNICIANS & RELATED SUPPORT	3645	1887	1759	3125	1658	1467	347	131	216	157	87	70
HEALTH TECHNOLOGISTS & TECHNICIANS	1276	225	1051	1033	180	853	187	30	157	59	15	44
ENGINEERING & RELATED TECHNOLOGISTS & TECH	937	757	180	819	665	154	72	56	16	41	35	6
ELECTRICAL & ELECTRONIC TECHNICIANS	326	280	46	282	241	41	25	21	4	20	17	2
INDUSTRIAL ENGINEERING TECHNICIANS	4	2	2	3	2	1	1	0	1	0	0	0
MECHANICAL ENGINEERING TECHNICIANS	13	10	3	8	7	1	3	2	1	0	0	0
ENGINEERING TECHNICIANS, N.E.C.	228	167	60	196	147	50	21	14	7	4	3	1
DRAFTING OCCUPATIONS	296	235	61	265	210	55	18	15	3	13	11	2
SURVEYING & MAPPING TECHNICIANS	70	62	8	64	57	7	4	4	1	4	4	0
SCIENCE TECHNICIANS	217	153	64	191	134	57	16	12	5	11	8	3
BIOLOGICAL TECHNICIANS	59	37	22	52	32	20	3	2	1	4	3	1
CHEMICAL TECHNICIANS	74	58	16	65	50	15	7	6	1	3	3	0

SOURCE: Characteristics of Doctoral Scientists and Engineers, 1987, National Science Foundation

TABLE 4-8

DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX AND RACE/ETHNICITY, 1987

		All Races		White		Black		Am. Indian		Asian		Hispanic*		Other/ no report
	Sex	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
TOTAL	Total	451,438	100	403,421	89.4	6,691	1.5	586	0.1	37,530	8.3	7,202	1.6	3,210
ALL FIELDS	Women	73,423	16.3	66,087	16.4	2,023	30.2	132	22.5	4,802	12.8	1,290	17.9	106
PHYSICAL	Total	75,753	100	67,449	89.0	668	0.9	100	0.1	7,053	9.3	1,081	1.4	483
SCIENTISTS	Women	6,275	8.3	5,129	7.6	78	11.7	3	0.0	1,030	14.6	151	14.0	35
Chemists	Total	49,403	100	43,660	88.4	526	1.1	63	0.1	4,894	9.9	727	1.5	260
	Women	5,127	10.4	4,206	9.6	70	13.3	3	0.1	820	16.8	129	17.7	28
Physicists/	Total	26,350	100	23,789	90.3	142	0.5	37	0.1	2,159	8.2	354	1.3	223
Astronomers	Women	1,148	4.4	923	3.9	8	5.6			210	9.7	22	6.2	7
MATHEMATICAL	Total	17,788	100	15,978	89.8	169	1.0	13	0.1	1,530	8.6	271	1.5	98
SCIENTISTS	Women	1,802	10.1	1,542	9.7	35	20.7	3	0.2	213	13.9	36	13.3	9
Mathema-	Total	14,795	100	13,508	91.3	149	1.0	10	0.1	1,034	7.0	243	1.6	94
ticians	Women	1,451	9.8	1,270	9.4	30	20.1	3	0.2	143	13.8	34	14.0	5
Statis-	Total	2,993	100	2,470	82.5	20	0.7	3	0.1	496	16.6	28	0.9	4
ticians	Women	351	11.7	272	11.0	5	25.0			70	14.1	2	0.6	4
COMPUTER/INFO	Total	18,626	100	16,274	87.4	200	1.1	5	0.0	1,838	9.9	329	1.8	309
SPECIALISTS	Women	1,909	10.2	1,693	10.4	8	4.0	1	20.0	190	10.3	21	6.4	17
ENVIRONMENTAL	Total	18,985	100	17,654	93.0	224	1.2	20	0.1	993	5.2	301	1.6	94
SCIENTISTS	Women	1,447	7.6	1,324	7.5	13	5.8	4	0.3	101	10.2	25	8.3	5
Earth	Total	14,646	100	13,555	92.6	177	1.2	18	0.1	806	5.5	218	1.5	90
Scientists	Women	1,106	7.6	1,012	7.5	13	7.3	4	0.4	72	8.9	13	6.0	5
Ocean-	Total	2,095	100	1,982	94.6	2	0.1			109	5.2	54	2.6	2
ographers	Women	246	11.7	231	11.7					15	13.8	10	18.5	
Atmospheric	Total	2,244	100	2,117	94.3	45	2.0	2	0.1	78	3.5	29	1.3	2
Scientists	Women	95	4.2	81	3.8					14	17.9	2	6.9	
LIFE	Total	117,453	100	106,466	90.6	1,577	1.3	143	0.1	8,558	7.3	1,614	1.4	729
SCIENTISTS	Women	24,787	21.1	22,084	20.7	551	34.9	50	35.0	1,998	23.3	340	21.1	103
Biological	Total	68,734	100	62,500	90.9	880	1.3	66	0.1	4,927	7.2	769	1.1	361
Scientists	Women	15,545	22.6	13,762	22.0	288	32.7	28	42.4	1,392	28.3	173	22.5	75
Agricultural	Total	17,631	100	16,414	92.1	190	1.1	36	0.2	1,084	6.1	380	2.1	103
Scientists	Women	1,211	6.8	1,066	6.5	20	10.5	2	5.6	121	11.2	42	11.1	2
Medical	Total	30,888	100	27,532	89.1	507	1.6	41	0.1	2,547	8.2	465	1.5	261
Scientists	Women	8,031	26.0	7,256	26.4	243	47.9	20	48.8	485	19.0	125	26.9	27
PSYCHOLO-	Total	59,432	100	56,581	95.2	1,300	2.2	115	0.2	885	1.5	1,057	1.8	551
GISTS	Women	20,299	34.2	19,036	33.6	697	53.6	37	32.2	398	45.0	404	38.2	131
SOCIAL	Total	72,275	100	65,989	91.3	1,896	2.6	153	0.2	3,722	5.1	1,403	1.9	515
SCIENTISTS	Women	15,097	20.9	13,876	21.0	585	30.9	26	17.0	545	14.6	280	20.0	65
Economists	Total	19,580	100	17,573	89.7	349	1.8	40	0.2	1,455	7.4	477	2.4	163
	Women	2,230	11.4	2,017	11.5	51	14.6	4		149	10.2	63	13.2	9
Sociologists/	Total	14,714	100	13,647	92.7	384	2.6	72	0.5	508	3.5	233	1.6	103
Anthropol.	Women	4,601	31.3	4,307	31.6	160	41.7	7	9.7	99	19.5	71	30.5	28
Other Social	Total	37,981	100	34,769	91.5	1,163	3.1	41	0.1	1,759	4.6	693	1.8	249
Scientists	Women	8,266	21.8	7,552	21.7	374	32.2	15	36.6	297	16.9	146	21.1	28
ENGINEERS	Total	71,126	100	57,050	80.2	657	0.9	37	0.1	12,951	18.2	1,146	1.6	431
	Women	1,807	2.5	1,403	2.5	56	8.5	8	21.6	327	2.5	33	2.9	13

Blanks indicate no cases reported. * Included here and in other racial groups.

Note: Top percentage in each field is percent of total. Next percentage is percent of women in that field.

SOURCE: National Research Council, Unpublished Data

TABLE 4-9

EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, RACE AND CITIZENSHIP, 1987

FIELD	SEX	TOTAL					WHITE					BLACK					AM. IND	ASIAN					HISPANIC				
		TOTAL*	U.S. CITIZEN		NON-CITIZEN		TOTAL+	U.S. CITIZEN		NON-CITIZEN		TOTAL	U.S. CITIZEN		NON-CIT		TOTAL	TOTAL	U.S. CITIZEN		NON-CIT		TOTAL	U.S. CIT		NON-CIT	
			Native	Nat.	Perm	Temp		Native	Nat.	Perm	Temp		Native	Nat.	Perm	Temp			Native	Nat.	Perm	Temp		Native	Nat.	Perm	emp
ALL FIELDS	T	419,118	349,916	43,372	21,675	3,557	372,985	338,565	21,755	10,886	1,400	6,359	4,832	763	642	102	546	36,397	3,864	20,477	9,966	1,916	6,949	3,991	1,718	930	304
	W	66,732	58,377	5,274	2,496	471	59,955	55,456	2,758	1,445	216	1,918	1,745	110	54	9	119	4,392	763	2,372	977	246	1,219	740	295	134	48
SCIENTISTS	T	351,350	302,668	30,358	15,337	2,548	319,091	292,457	16,701	8,590	1,095	5,704	4,531	622	429	102	510	23,645	3,319	12,747	6,184	1,249	5,865	3,474	1,346	778	263
	W	65,004	57,165	4,976	2,312	443	58,608	54,331	2,641	1,352	204	1,864	1,696	108	51	9	112	4,085	743	2,195	889	230	1,186	730	289	117	48
Chemists	T	44,136	35,766	5,319	2,770	278	38,635	34,733	2,299	1,492	108	483	322	43	76	42	59	4,741	452	2,959	1,202	128	675	500	117	55	3
	W	4,470	3,388	766	256	55	3,672	3,254	292	109	14	67	52	4	8	3	3	700	56	467	139	38	119	46	63	7	3
Physicists/	T	24,511	19,881	2,747	1,549	303	22,116	19,366	1,578	1,066	75	137	137				37	2,047	208	1,153	481	201	352	166	62	95	29
Astronomers	W	1,014	715	125	146	24	814	673	49	78	14	8	8					185	27	76	66	10	20	9	6	5	
Mathematicians	T	13,878	11,380	1,477	843	178	12,640	11,083	902	590	65	146	146				10	988	53	589	253	113	238	123	65	45	5
	W	1,292	1,031	135	110	16	1,123	989	49	76	9	27	27				3	134	7	86	34	7	29	17	2	5	5
Statisticians	T	2,821	1,970	551	250	50	2,300	1,939	280	59	22	20	20				3	494	4	271	191	28	28		6		22
	W	333	241	25	57	10	256	230	9	15	2	5	5					68	2	16	42	8	2				2
Computer/Info.	T	18,571	15,022	2,097	1,293	159	16,219	14,655	971	523	70	200	57	114	29		5	1,838	110	982	678	68	329	201	63	51	14
Specialists	W	1,878	1,550	250	71	7	1,662	1,508	112	41	1	8	8				1	190	21	133	30	6	8	3	4	1	
Environmental	T	17,811	15,189	1,279	1,160	170	16,587	14,995	800	728	51	222	83	18	79	42	17	943	69	444	77		287	131	137	14	5
Scientists	W	1,301	1,117	116	58	10	1,188	1,086	63	32	7	11	11				1	98	16	53	26	3	22	3	17	2	
Biological	T	61,985	53,819	5,197	2,308	559	56,081	52,044	2,519	1,194	261	828	616	116	96		51	4,733	864	2,558	991	281	747	518	115	102	12
Scientists	W	13,516	11,486	1,331	534	136	11,885	10,946	607	272	42	256	223	33			21	1,285	239	689	252	94	67	48	14	4	1
Agricultural	T	15,796	14,132	1,039	504	119	14,572	13,752	480	269	69	145	118	15	12		34	964	185	521	208	50	377	117	179	54	27
Scientists	W	1,078	888	93	82	13	963	847	59	42	13	20	20				2	91	17	34	40		39	21	5	13	
Medical	T	29,597	25,160	3,054	1,153	164	26,302	24,090	1,646	480	75	483	436	11	16		41	2,510	413	1,365	645	52	438	248	130	36	22
Scientists	W	7,515	6,760	506	221	25	6,774	6,413	211	132	15	236	221	11			20	458	79	284	85	10	122	110	9	1	
Psychologists	T	56,378	53,284	2,227	764	19	53,655	51,030	1,961	600	10	1,266	1,207	20	39		113	858	517	209	118	9	1,016	761	203	47	5
	W	19,104	17,833	874	319	19	17,901	16,850	729	258	10	675	646	10	19		35	374	192	126	42	9	388	266	100	17	5
Economists	T	17,837	14,513	1,689	1,257	309	15,967	14,224	820	755	154	300	169	82	34	15	40	1,417	50	704	468	140	472	166	86	154	62
	W	2,036	1,708	155	104	69	1,856	1,685	75	41	55	42	13	15	11	3	4	130	6	61	52	11	58	20	7	14	17
Sociologists/	T	12,933	11,606	807	470	10	11,960	11,049	540	344	7	347	283	64			67	462	137	196	126	3	223	148	27	48	
Anthropol.	W	3,900	3,609	160	121	10	3,638	3,432	101	98	7	142	129	13			7	91	26	39	23	3	67	50	13	4	
Other Social	T	35,096	30,946	2,875	1,016	230	32,037	29,495	1,905	488	128	1,127	937	139	48	3	33	1,650	257	816	470	99	683	395	156	75	57
Scientists	W	7,567	6,839	436	233	49	6,876	6,418	285	158	15	367	333	22	9	3	15	281	55	131	56	31	136	76	19	29	12
ENGINEERS	T	67,768	47,248	13,014	6,338	1,009	53,894	46,108	5,054	2,296	305	655	301	141	213		36	12,752	545	7,730	3,782	667	1,084	517	372	154	41
	W	1,728	1,212	298	184	28	1,347	1,125	117	93	12	54	49	2	3		7	307	20	177	88	16	33	10	6	17	
Chemical	T	6,923	4,597	1,385	786	136	4,988	4,554	250	135	30	72	14		58			1,814	7	1,135	566	106	102	91	8	3	
Engineers	W	140	97	28	15		111	88	15	8		7	7					20		13			2	1		1	
Civil Engineers	T	6,479	4,325	1,477	616	61	5,182	4,271	609	279	23	23	15	4	4		12	1,254	19	864	333	38	112	71	9	32	
	W	163	117	16	27	3	135	106	5	24		4	4					19	2	11	3	3					
Elec./Electron.	T	12,601	8,118	2,793	1,470	213	9,744	7,936	1,196	515	88	209	97	29	83		4	2,525	65	1,479	864	117	117	23	10	84	
Engineers	W	365	232	76	48	9	260	216	26	12	6	12	12					91	4	48	36	3	3	1	1	1	
Mechanical	T	6,711	4,440	1,464	673	86	5,124	4,229	520	303	24	127	27	97	3		1	1,412	136	847	367	62	69	46	11	12	
Engineers	W	96	63	23	7	5	73	60	9	2	2	4	1		3			21	2	14	2	3					

* Includes "Other" and "No Report". + Includes U.S. citizens whose birthplace is unknown and non-citizens whose visa status is unknown.
Blank indicates no cases reported.

SOURCE: Women and Minorities in Science and Engineering, National Sciencd Foundation, NSF 90–301, January 1990

TABLE 4–10

EMPLOYED SCIENTISTS & ENGINEERS BY FIELD, SEX AND RACE/ETHNIC GROUP, 1988

	Total#	V%	Men	Women		White		Black		Asian		Native American		Hispanic~	
			No.	No.	%W	No.	%W	No.	%B	No.	%A	No.	%N	No.	%H
Total	5,286,400	100.0	4,417,400	869,900	16.5	4,761,900	90.1	139,200	2.6	268,100	5.1	21,900	0.4	95,900	1.8
Scientists	2,567,800	48.6	1,821,500	745,700	29.0	2,299,400	89.5	94,800	3.7	117,100	4.6	8,700	0.3	43,800	1.7
Physical	312,000	5.9	265,500	46,500	14.9	279,500	89.6	6,500	2.1	20,600	6.6	700	0.2	5,200	1.7
Chemists	197,000	3.7	161,800	35,300	17.9	174,600	88.6	4,800	2.4	15,100	7.7	400	0.2	3,100	1.6
Phy/Astron	77,800	1.5	72,600	5,200	6.7	70,800	91.0	900	1.2	4,400	5.7	300	0.4	1,900	2.4
Other	37,100	0.7	31,100	6,000	16.2	34,200	92.2	800	2.2	1,100	3.0	100	0.3	300	0.8
Mathematical	168,600	3.2	123,600	44,900	26.6	145,700	86.4	9,500	5.6	9,200	5.5	200	0.1	3,900	2.3
Math	145,100	2.7	106,400	38,700	26.7	125,100	86.2	8,900	6.1	7,300	5.0	200	0.1	3,400	2.3
Statsitics	23,500	0.4	17,300	6,200	26.4	20,500	87.2	600	2.6	1,900	8.1	*		400	1.7
Computer	708,300	13.4	489,300	218,700	30.9	625,300	88.3	2,600	0.4	46,900	6.6	400	0.1	8,700	1.2
Environment	113,400	2.1	101,000	12,300	10.8	107,100	94.4	1,000	0.9	1,600	1.4	700	0.6	2,100	1.9
Earth	94,200	1.8	83,000	11,100	11.8	89,400	94.9	700	0.7	1,200	1.3	400	0.4	1,800	1.9
Ocean	4,600	0.1	3,900	700	15.2	3,800	82.6	100	2.2	100	2.2	300	6.5	200	4.3
Atmospheric	14,600	0.3	14,000	500	3.4	13,900	95.2	100	0.7	200	1.4	*		100	0.7
Life	458,600	8.7	330,800	127,700	27.8	413,800	90.2	9,500	2.1	20,100	4.4	3,400	0.7	10,100	2.2
Biological	299,400	5.7	210,100	89,200	29.8	267,700	89.4	7,700	2.6	15,200	5.1	1,400	0.5	7,000	2.3
Agricultural	124,000	2.3	92,800	31,200	25.2	113,600	91.6	1,400	1.1	2,900	2.3	1,900	1.5	2,900	2.3
Medical	35,200	0.7	27,900	7,300	20.7	32,500	92.3	400	1.1	1,900	5.4	100	0.3	300	0.9
Psychologist	275,900	5.2	143,900	132,000	47.8	256,000	92.8	10,100	3.7	4,600	1.7	1,100	0.4	4,700	1.7
Social	531,000	10.0	367,300	163,700	30.8	472,100	88.9	32,300	6.1	14,200	2.7	2,000	0.4	9,000	1.7
Economists	219,800	4.2	174,900	44,900	20.4	199,300	90.7	8,400	3.8	7,000	3.2	1,300	0.6	4,700	2.1
Social/Anthr	93,900	1.8	48,400	45,500	48.5	78,400	83.5	8,800	9.4	3,700	3.9	400	0.4	2,600	2.8
Other	217,300	4.1	143,900	73,400	33.8	194,400	89.5	15,100	6.9	3,500	1.6	300	0.1	1,700	0.8
Engineers	2,718,600	51.4	259,600	122,200	4.5	2,462,500	90.6	44,400	1.6	151,000	5.6	13,200	0.5	52,100	1.9
Aeronaut/Ast	119,400	2.3	114,200	5,300	4.4	106,900	89.5	1,600	1.3	9,300	7.8	300	0.3	1,400	1.2
Chemical	148,500	2.8	136,000	12,500	8.4	136,000	91.6	1,700	1.1	8,000	5.4	600	0.4	2,600	1.8
Civil	355,900	6.7	346,600	9,300	2.6	316,100	88.8	6,200	1.7	25,400	7.1	900	0.3	7,100	2.0
Electrical	640,900	12.1	616,900	23,800	3.7	570,700	89.0	11,000	1.7	44,000	6.9	2,800	0.4	13,600	2.1
Industrial	172,300	3.3	160,900	11,400	6.6	160,300	93.0	3,100	1.8	5,000	2.9	1,200	0.7	3,400	2.0
Materials	65,600	1.2	61,800	3,700	5.6	59,300	90.4	600	0.9	4,400	6.7	400	0.6	800	1.2
Mechanical	497,800	9.4	480,900	16,900	3.4	455,700	91.5	7,100	1.4	26,300	5.3	2,100	0.4	8,500	1.7
Mining	21,300	0.4	20,300	900	4.2	20,600	96.7	*		500	2.3	*		200	0.9
Nuclear	29,000	0.5	27,800	1,200	4.1	26,400	91.0	500	1.7	2,000	6.9	*		100	0.3
Petroleum	37,400	0.7	35,300	2,100	5.6	34,500	92.2	400	1.1	400	1.1	900	2.4	800	2.1
Other	630,400	11.9	595,200	35,100	5.6	575,900	91.4	12,300	2.0	25,800	4.1	4,100	0.7	13,600	2.2

* Too few cases to estimate. ~ Includes members of all racial groups.

Detail may not add to total because racial and ethnic categories are not mutually exclusive and total includes other and no report.

TABLE 4-11

EMPLOYED RECENT SCIENCE & ENGINEERING MASTER'S GRADUATES BY FIELD, SEX AND RACE/ETHNIC GROUP, 1988

	Master's Recipients*															
			Men	Women		White		Black		Asian		Am. Ind.		Hispanic~	
Field of Degree	Total#	V%	No.	No.	%W	No.	%Wh	No.	%B	No.	%A	No.	%I	No.	%H
Total	88,500	100.0	62,000	24,500	33.3	67,600	78.2	2,600	3.0	7,700	8.9	300	0.3	2,600	3.0
Sciences	59,100	68.3	38,200	20,900	35.4	46,900	79.4	2,000	3.4	4,400	7.4	100	0.2	1,900	3.2
Physical	3,700	4.3	2,600	1,100	29.7	3,100	83.8	200	5.4	200	5.4	*		100	2.7
Chemistry	1,800	2.1	1,100	600	33.3	1,400	77.8	200	11.1	100	5.6	*		0	0.0
Phy/Astron	1,000	1.2	900	100	10.0	800	80.0	0	0.0	100	10.0	*		0	0.0
Other	900	1.0	600	300	33.3	800	88.9	0	0.0	0	0.0	*		0	0.0
Math/Stat	6,900	8.0	4,700	2,200	31.9	5,400	78.3	200	2.9	500	7.2	*		200	2.9
Computer	19,900	23.0	14,100	5,800	29.1	15,200	76.4	500	2.5	2,600	13.1	*		700	3.5
Environmental	3,000	3.5	2,300	700	23.3	2,700	90.0	0	0.0	0	0.0	0	0.0	0	0.0
Life	11,100	12.8	6,400	4,700	42.3	8,900	80.2	400	3.6	400	3.6	0	0.0	600	5.4
Biology	6,800	7.9	3,300	3,500	51.5	5,400	79.4	300	4.4	300	4.4	0	0.0	400	5.9
Agricultural	4,300	5.0	3,100	1,200	27.9	3,500	81.4	200	4.7	100	2.3	*		100	2.3
Psychology	4,000	4.6	1,700	2,300	57.5	3,400	85.0	300	7.5	0	0.0	100	2.5	*	
Social	10,600	12.3	6,500	4,100	38.7	8,200	77.4	400	3.8	600	5.7	0	0.0	400	3.8
Economics	2,500	2.9	2,100	400	16.0	1,600	64.0	200	8.0	200	8.0	*		300	12.0
Social/Anthro	1,700	2.0	900	800	47.1	1,500	88.2	100	5.9	*		*		*	
Other	6,400	7.4	3,500	2,900	45.3	5,100	79.7	200	3.1	400	6.3	0	0.0	100	1.6
Engineering	27,300	31.6	23,800	3,600	13.2	20,700	75.8	500	1.8	3,300	12.1	200	0.7	700	2.6
Aero/Astro	1,200	1.4	1,100	100	8.3	900	75.0	0	0.0	0	0.0	*		0	0.0
Chemical	1,500	1.7	1,300	300	20.0	1,200	80.0	0	0.0	200	13.3	0	0.0	0	0.0
Civil	4,000	4.6	3,400	600	15.0	3,000	75.0	100	2.5	500	12.5	0	0.0	200	5.0
Elect/Electron	8,000	9.2	7,400	600	7.5	5,700	71.3	100	1.3	1,300	16.3	*		200	2.5
Industrial	1,500	1.7	1,200	300	20.0	1,100	73.3	100	6.7	200	13.3	*		100	6.7
Materials	800	0.9	600	200	25.0	600	75.0	0	0.0	100	12.5	*		0	0.0
Mechanical	4,300	5.0	3,800	500	11.6	3,400	79.1	0	0.0	500	11.6	100	2.3	0	0.0
Mining	400	0.5	400	0	0.0	300	75.0	0	0.0	0	0.0	*		0	0.0
Nuclear	300	0.3	300	0	0.0	200	66.7	*	0.0	0	0.0	*		0	0.0
Petroleum	300	0.3	300	0	0.0	200	66.7	0	0.0	0	0.0	0	0.0	100	33.3
Other	5,000	5.8	4,000	900	18.0	4,000	80.0	100	2.0	500	10.0	0	0.0	900	18.0

* Too few cases to estimate. ~ Includes members of all racial groups.

Detail may not add to total because racial and ethnic categories are not mutually exclusive and total includes other and no report.

^ Graduates who recieved their degree in either academic year 1986 or 1987.

SOURCE: Totals for 1958 through 1971 are based on estimates by Adolph Wilburn. Totals for 1972 through 1989 are from the National Research Council.

TABLE 4-12

BLACKS AMONG U.S. DOCTORATES AWARDED FROM 1958 THROUGH 1989

FIELD	All PhDs	% of Total	Black	% of Black	Blacks as % of Total
TOTAL ALL FIELDS	735,296	100.0	20,668	100.0	2.81
Physical Sci. & Math	118,553	16.1	1,127	5.5	0.95
Engineering	62,692	8.5	408	2.0	0.65
Life Sciences	118,102	16.1	1,767	8.5	1.50
Social Sciences	142,953	19.4	3,706	17.9	2.59
Arts & Humanities	98,625	13.4	1,915	9.3	1.94
Education	159,224	21.7	10,611	51.3	6.66
Professional Fields	35,147	4.8	1,134	5.5	3.23

SOURCE: Women and Minorities in Science and Engineering, National Science Foundation, NSF 90-301, January 1990

TABLE 4-13

EMPLOYED RECENT SCIENCE & ENGINEERING BACHELOR'S GRADUATES BY FIELD, SEX AND RACE/ETHNIC GROUP, 1988

	Bachelor's Recipients^															
			Men	Women		White		Black		Asian		Am. Ind.		Hispanic~	
Field of Degree	Total#	V%	No.	No.	W	No.	%Wh	No.	B	No.	A	No.	%I	No.	H
Total	484,800	100.0	311,700	173,000	35.7	407,400	84.0	19,700	4.1	18,400	3.8	2,500	0.5	15,800	3.3
Sciences	346,200	71.4	192,100	154,100	44.5	291,900	84.3	14,800	4.3	11,400	3.3	1,900	0.5	11,200	3.2
Physical	16,400	3.4	11,200	5,100	31.1	13,800	84.1	700	4.3	400	2.4	0	0.0	500	3.0
Chemistry	9,600	2.0	5,800	3,800	39.6	7,900	82.3	500	5.2	300	3.1	0	0.0	400	4.2
Phy/Astron	4,600	0.9	3,900	700	15.2	4,100	89.1	100	2.2	0	0.0	*	0.0	0	0.0
Other	2,200	0.5	1,500	600	27.3	1,700	77.3	100	4.5	100	4.5	*	0.0	100	4.5
Math/Stat	26,400	5.4	14,200	12,200	46.2	23,100	87.5	1,000	3.8	800	3.0	*	0.0	700	2.7
Computer	73,000	15.1	47,800	25,200	34.5	59,900	82.1	2,900	4.0	4,000	5.5	300	0.4	2,300	3.2
Environmental	7,100	1.5	5,600	1,500	21.1	6,500	91.5	100	1.4	100	1.4	*	0.0	100	1.4
Life	56,100	11.6	28,700	27,500	49.0	47,600	84.8	1,500	2.7	2,600	4.6	300	0.5	1,500	2.7
Biology	39,500	8.1	17,500	22,000	55.7	33,400	84.6	1,400	3.5	2,300	5.8	200	0.5	1,100	2.8
Agricultural	16,700	3.4	11,200	5,500	32.9	14,200	85.0	100	0.6	300	1.8	100	0.6	400	2.4
Psychology	54,700	11.3	20,700	34,000	62.2	43,300	79.2	3,300	6.0	1,900	3.5	600	1.1	2,400	4.4
Social	112,400	23.2	63,800	48,500	43.1	97,700	86.9	5,400	4.8	1,600	1.4	600	0.5	3,800	3.4
Economics	39,000	8.0	25,100	13,900	35.6	35,500	91.0	1,000	2.6	700	1.8	*	0.0	1,200	3.1
Social/Anthro	24,700	5.1	9,200	15,500	62.8	20,300	82.2	1,900	7.7	500	2.0	200	0.8	1,000	4.0
Other	48,600	10.0	29,500	19,100	39.3	4,200	8.6	2,400	4.9	500	1.0	400	0.8	1,600	3.3
Engineering	138,600	28.6	119,700	18,900	13.6	115,400	83.3	4,900	3.5	7,100	5.1	700	0.5	4,600	3.3
Aero/Astro	6,200	1.3	5,600	600	9.7	5,500	88.7	100	1.6	200	3.2	*	0.0	200	3.2
Chemical	8,500	1.8	6,100	2,400	28.2	7,400	87.1	200	2.4	400	4.7	0	0.0	200	2.4
Civil	15,200	3.1	13,000	2,200	14.5	12,700	83.6	500	3.3	700	4.6	100	0.7	400	2.6
Elect/Electron	47,800	9.9	43,100	4,700	9.8	38,400	80.3	1,800	3.8	3,300	6.9	300	0.6	1,800	3.8
Industrial	12,200	2.5	9,400	2,800	23.0	10,200	83.6	600	4.9	300	2.5	100	0.8	400	3.3
Materials	1,700	0.4	1,300	500	29.4	1,500	88.2	0	0.0	100	5.9	*	0.0	0	0.0
Mechanical	29,100	6.0	26,200	2,800	9.6	25,100	86.3	800	2.7	1,400	4.8	0	0.0	600	2.1
Mining	1,200	0.2	1,200	100	8.3	1,100	91.7	*		*	0.0	*		*	0.0
Nuclear	500	0.1	400	100	20.0	500	100.0	0	0.0	0	0.0	0		0	0.0
Petroleum	1,800	0.4	1,600	200	11.1	1,500	83.3	0	0.0	0	0.0	0	0.0	100	5.6
Other	14,300	2.9	11,700	2,600	18.2	11,600	81.1	800	5.6	600	4.2	100	0.7	900	6.3

* Too few cases to estimate. ~ Includes members of all racial groups.

Detail may not add to total because racial and ethnic categories are not mutually exclusive and total includes other and no report.

^ Graduates who recieved their degree in either academic year 1986 or 1987.

SOURCE: Women and Minorities in Science and Engineering, National Science Foundation, NFS 90-301, January 1990

TABLE 4-14

LABOR FORCE PARTICIPATION AND UNEMPLOYMENT RATES OF RECENT S&E GRADUATES BY DEGREE LEVEL, FIELD, SEX AND RACIAL/ETHNIC GROUP, 1988

	BACHELOR'S RECIPIENTS+															
	LABOR FORCE PARTICIPATION						Nat.	His-	UNEMPLOYMENT RATES						Nat.	His-
FIELD OF Ph.D	Total	Men	Women	White	Black	Asian	Amer.	panic#	Total	Men	Women	White	Black	Asian	Amer.	panic#
All Fields	97.7	88.3	96.7	97.5	97.8	91.4	91.4	97.0	2.4	2.4	2.6	2.3	3.4	3.5	7.8	4.4
All Sciences	97.2	97.7	96.5	96.9	98.1	90.0	90.0	95.9	2.6	2.6	2.6	2.7	1.6	2.5	10.3	5.4
Physical	94.7	96.6	91.0	94.2	100.0	100.0	100.0	97.3	3.6	2.4	6.1	4.0	0.0	7.4	0.0	5.8
Math/Statistics	97.6	98.5	96.6	97.8	100.0	100.0	*	100.0	3.9	4.8	2.9	3.4	7.3	0.0	*	12.0
Computer	98.7	99.7	96.9	98.4	100.0	100.0	89.2	97.0	2.2	2.4	1.8	1.9	4.6	5.1	0.0	3.1
Environmental	96.5	98.3	90.3	96.8	100.0	100.0	*	93.8	3.5	3.8	2.6	3.2	5.7	40.0	*	0.0
Life	94.9	97.0	92.9	94.8	100.0	92.0	100.0	88.1	2.2	1.9	2.5	2.3	0.0	0.0	0.0	14.2
Psychology	97.0	96.0	97.6	97.1	100.0	100.0	75.3	100.0	1.8	2.0	1.7	2.2	0.6	0.0	0.0	7.5
Social	97.0	97.2	98.4	97.2	96.0	100.0	100.0	95.4	3.1	2.9	3.4	3.3	0.0	0.0	25.1	0.0
Engineering	99.1	99.1	98.6	99.1	97.8	97.3	96.1	100.0	2.0	1.9	2.4	1.3	8.5	5.0	0.0	3.0
	MASTER'S RECIPIENTS+															
	LABOR FORCE PARTICIPATION						Nat.	His-	UNEMPLOYMENT RATES						Nat.	His-
FIELD OF Ph.D	Total	Men	Women	White	Black	Asian	Amer.	panic#	Total	Men	Women	White	Black	Asian	Amer.	panic#
All Fields	97.3	98.6	94.2	97.4	97.4	94.1	99.3	99.6	1.7	1.5	2.4	1.5	3.7	3.9	0.0	0.0
All Sciences	96.8	98.4	93.9	96.8	96.8	91.7	100.0	100.0	1.8	1.3	2.7	1.7	2.2	3.4	0.0	0.0
Physical	95.7	98.0	*	95.9	100.0	93.3	*	100.0	2.9	2.3	*	1.9	0.0	10.9	*	0.0
Math/Statistics	95.9	96.2	95.1	96.3	78.0	94.0	*	100.0	1.1	1.3	0.8	0.7	0.0	0.0	*	0.0
Computer	97.4	99.0	93.7	98.2	100.0	88.2	*	100.0	1.1	0.7	2.1	0.6	0.0	4.7	*	0.0
Environmental	95.6	99.0	*	94.3	100.0	100.0	100.0	100.0	1.9	1.3	*	1.9	14.8	0.0	0.0	0.0
Life	98.7	99.9	97.2	98.3	100.0	100.0	100.0	100.0	1.3	0.7	2.1	1.6	0.0	0.0	0.0	0.0
Psychology	98.6	100.0	97.6	98.4	100.0	100.0	100.0	*	2.5	*	4.3	2.9	0.0	0.0	0.0	*
Social	94.3	97.1	90.2	93.6	100.0	100.0	100.0	100.0	3.2	3.0	3.5	3.7	8.6	0.0	0.0	0.0
Engineering	98.6	99.0	96.2	99.0	99.8	95.1	96.8	98.6	1.7	1.8	1.0	1.0	9.3	4.6	0.0	0.0

* Too few cases to estimate. # Includes members of all racial groups.

+ Graduates who received their degrees in either academic year 1986 or 1987.

SOURCE: Characteristics of Doctoral Scientists and Engineers in the United States: 1987, National Science Foundation (NSF 88-331)

TABLE 4-15

SEX & RACE/ETHNICITY OF DOCTORAL SCIENTISTS & ENGINEERS IN THE U.S., 1973–87

Year	Total	Men	Women	%W	White	%W	Black	%Bl	Asian	%A	Indian	%I	Hispanic	%H
1973	238,831	217,998	20,833	8.7	218,939	91.7	2,200	0.9	10,861	4.5	171	0.07	1,731	0.7
1975	270,355	244,844	25,511	9.4	245,835	90.9	2,628	1.0	13,948	5.2	214	0.08	2,139	0.8
1977	304,067	272,299	31,768	10.4	275,852	90.7	2,812	0.9	16,757	5.5	244	0.08	2,826	0.9
1979	332,918	294,927	37,991	11.4	302,624	90.9	3,523	1.1	23,614	7.1	404	0.12	4,228	1.3
1981	364,157	318,445	45,712	12.6	328,080	90.1	4,513	1.2	28,366	7.8	421	0.12	5,069	1.4
1983	395,033	340,482	54,551	13.8	354,432	89.7	5,277	1.3	31,076	7.9	443	0.11	5,716	1.4
1985	424,616	360,609	64,007	15.1	378,834	89.2	5,935	1.4	35,564	8.4	534	0.13	6,206	1.5
1987	451,438	378,015	73,423	16.3	403,421	89.4	6,691	1.5	37,530	8.3	586	0.13	7,202	1.6

SOURCE: Immigration and Naturalization Service, U.S. Dept of Justice and National Science Foundation, SRS in Immigrant Scientists and Engineers, 1988, National Science Foundation

TABLE 4-16

IMMIGRANT SCIENTISTS & ENGINEERS BY MAJOR S/E GROUP & PERCENT ADMITTED BY ADJUSTING STATUS, 1966 – 1988

YEAR	Total all Immigrants	Engineers	Natural Scientists	Math and Computer Scientists	Social Scientists	Admitted via Adjusted Status*
1966	7,200	4,900	800	200	300	32%
1967	12,500	8,800	2,800	400	500	41
1968	13,100	9,300	2,800	400	600	32
1969	10,300	7,200	2,400	200	500	34
1970	13,300	9,300	2,900	300	800	41
1971	13,100	9,000	3,100	400	600	45
1972	11,200	7,400	2,900	300	600	48
1973	6,500	4,400	1,600	100	400	34
1974	6,400	3,900	1,300	600	600	34
1975	7,400	4,600	1,500	700	600	34
1976	7,700	5,100	1,500	500	600	33
1977	8,200	5,200	1,800	600	600	32
1978	10,600	6,800	2,100	900	800	40
1979-81 not available						
1982	12,200	7,900	1,800	1,800	700	56
1983	10,500	6,800	1,500	1,600	600	52
1984	9,600	6,100	1,400	1,500	600	46
1985	10,900	8,100	1,300	1,000	500	49
1986	11,200	8,400	1,300	1,000	500	48
1987	11,300	8,300	1,300	1,200	500	44
1988	10,900	8,100	1,200	1,200	500	44

* Scientists and Engineers who changed to immigrant status while resident in the U.S. Includes former intra-company transferees, students, exchange visitors and temporary workers.

SOURCE: Immigration and Naturalization Service, U.S. Dept of Justice and National Science Foundation, SRS in Immigrant Scientists and Engineers, 1988, National Science Foundation

TABLE 4-17

IMMIGRANT SCIENTISTS AND ENGINEERS BY SEX, AGE GROUP, AND REGION OF LAST PERMAMENT RESIDENCE: 1988

Broad Occupation, Sex and Age Group	Total*	Region of Last Permament Residence													
		Western Europe		Eastern Europe		Near and Mid East		Far East		Africa		N. & Cen America		South America	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
All Occupational Group	10,918	2,101	19.2	457	4.2	1,150	10.5	4,716	43.2	450	4.1	1,385	12.7	517	4.7
Male, Total	9,251	1,849	20.0	274	3.0	1,013	11.0	4,017	43.4	385	4.2	1,176	12.7	421	4.6
Under 30	2,896	618	21.3	44	1.5	387	13.4	1,245	43.0	109	3.8	360	12.4	113	3.9
30-44	5,016	979	19.5	164	3.3	512	10.2	2,168	43.2	230	4.6	648	12.9	236	4.7
45 and over	1,339	252	18.8	66	4.9	114	8.5	604	45.1	46	3.4	168	12.5	72	5.4
Female, Total	1,666	252	15.1	183	11.0	137	8.2	699	42.0	65	3.9	209	12.5	96	5.8
Under 30	689	108	15.7	44	6.4	58	8.4	315	45.7	25	3.6	96	13.9	38	5.5
30-44	830	128	15.4	117	14.1	74	8.9	308	37.1	37	4.5	98	11.8	49	5.9
45 and over	147	16	10.9	22	15.0	5	3.4	76	51.7	3	2.0	15	10.2	9	6.1
Scientists, Total	2,837	601	21.2	189	6.7	201	7.1	1,069	37.7	122	4.3	427	15.1	152	5.4
Male, Total	1,913	435	22.7	64	3.3	144	7.5	742	38.8	91	4.8	289	15.1	90	4.7
Under 30	490	122	24.9	8	1.6	37	7.6	187	38.2	27	5.5	68	13.9	32	6.5
30-44	1,184	270	22.8	37	3.1	84	7.1	472	39.9	55	4.6	177	14.9	49	4.1
45 and over	239	43	18.0	19	7.9	23	9.6	83	34.7	9	3.8	44	18.4	9	3.8
Female, Total	924	166	18.0	125	13.5	57	6.2	327	35.4	31	3.4	138	14.9	62	6.7
Under 30	343	70	20.4	28	8.2	21	6.1	129	37.6	12	3.5	57	16.6	23	6.7
30-44	506	85	16.8	85	16.8	33	6.5	171	33.8	17	3.4	70	13.8	31	6.1
45 and over	75	11	14.7	12	16.0	3	4.0	27	36.0	2	2.7	11	14.7	8	10.7
Engineers, Total	8,080	1,500	18.6	268	3.3	949	11.7	3,647	45.1	328	4.1	958	11.9	365	4.5
Male, Total	7,338	1,414	19.3	210	2.9	869	11.8	3,275	44.6	294	4.0	887	12.1	331	4.5
Under 30	2,406	496	20.6	36	1.5	350	14.5	1,058	44.0	82	3.4	292	12.1	81	3.4
30-44	3,832	709	18.5	127	3.3	428	11.2	1,696	44.3	175	4.6	471	12.3	187	4.9
45 and over	1,100	209	19.0	47	4.3	91	8.3	521	47.4	37	3.4	124	11.3	63	5.7
Female, Total	742	86	11.6	58	7.8	80	10.8	372	50.1	34	4.6	71	9.6	34	4.6
Under 30	346	38	11.0	16	4.6	37	10.7	186	53.8	13	3.8	39	11.3	15	4.3
30-44	324	43	13.3	32	9.9	41	12.7	137	42.3	20	6.2	28	8.6	18	5.6
45 and over	72	5	6.9	10	13.9	2	2.8	49	68.1	1	1.4	4	5.6	1	1.4

* Excludes Other Areas and Unknown which are less than 2% of total.

SOURCE: Women and Minorities in Science and Engineering, National Science Foundation, NSF 90-301, January 1990

TABLE 4-18

PHYSICAL DISABILITIES AND EMPLOYMENT STATUS OF DISABLED SCIENTISTS AND ENGINEERS, 1986

	Total		Disability								Employment Status					
			Visual		Auditory		Ambulatory		Other		In Labor Force		Total Employed		Un-employed	
Field	Disabled	V%	No.	%Vis	No.	%Aud	No.	Amb	No.	%Oth	No.	%In	No.	Emp	No.	%Un
All Fields	94,200	100	21,100	22.4	16,500	17.5	20,500	21.8	36,100	38.3	71,400	75.8	70,300	98.5	1,100	1.5
Scientists	40,400	42.9	9,700	24.0	7,600	18.8	9,800	24.3	13,400	33.2	34,500	85.4	34,200	99.1	300	0.9
Physical	7,600	8.1	2,500	32.9	1,100	14.5	1,400	18.4	2,600	34.2	5,300	69.7	5,300	100.0	*	0.0
Mathematical	1,600	1.7	300	18.8	400	25.0	500	31.3	500	31.3	1,600	100.0	1,500	93.8	100	6.3
Computer	9,200	9.8	1,800	19.6	2,700	29.3	3,000	32.6	1,700	18.5	9,100	98.9	9,100	100.0	*	0.0
Environmental	3,000	3.2	200	6.7	400	13.3	1,300	43.3	1,100	36.7	2,000	66.7	2,000	100.0	*	0.0
Life	6,300	6.7	1,300	20.6	1,200	19.0	1,700	27.0	2,100	33.3	5,700	90.5	5,600	98.2	100	1.8
Psychologists	6,100	6.5	1,100	18.0	1,400	23.0	1,200	19.7	2,400	39.3	5,400	88.5	5,400	100.0	*	0.0
Social	6,600	7.0	2,600	39.4	400	6.1	700	10.6	2,900	43.9	5,500	83.3	5,300	96.4	100	1.8
Engineers	53,800	57.1	11,400	21.2	8,900	16.5	10,800	20.1	22,700	42.2	36,900	68.6	36,100	97.8	800	2.2

Note: Detail may not add to totals beacuse of rounding

SOURCE: Characteristics of Doctoral Scientists and Engineers in the United States, 1987 National Science Foundation.

TABLE 5-1

DOCTORAL SCIENTISTS AND ENGINEEERS IN ACADEMIC INSTITUTIONS BY FIELD, RANK AND SEX, 1987

Fields	Total Faculty*	Professor	%	Associate Prof	%	Assistant Prof	%	Instructor/ Lecturer	%	Adjunct Faculty	%	Other Faculty	%
Total Fields	209,384	85,819	41	50,483	24	36,486	17	4,234	2.0	3,047	1.5	16,175	7.7
Men	174,514	79,612	46	41,709	24	26,394	15	2,454	1.4	2,016	1.2	11,774	6.7
Women	34,870	6,207	18	8,774	25	10,092	29	1,780	5.1	1,031	3.0	4,401	12.6
All Scientists	185,746	74,451	40	45,628	25	32,743	18	4,066	2.2	2,735	1.5	14,970	8.1
Men	151,441	68,316	45	36,993	24	22,861	15	2,300	1.5	1,710	1.1	10,636	7.0
Women	34,305	6,135	18	8,635	25	9,882	29	1,766	5.1	1,025	3.0	4,334	12.6
Chemists	15,104	7,433	49	2,802	19	1,707	11	299	2.0	202	1.3	1,458	9.7
Men	13,306	7,038	53	2,471	19	1,328	10	174	1.3	139	1.0	1,148	8.6
Women	1,798	395	22	331	18	379	21	125	7.0	63	3.5	310	17.2
Physicists/Astron	13,625	5,851	43	2,017	15	1,323	10	151	1.1	114	0.8	1,751	12.9
Men	13,040	5,745	44	1,928	15	1,191	9	129	1.0	106	0.8	1,633	12.5
Women	585	106	18	89	15	132	23	22	3.8	8	1.4	118	20.2
Mathematicians	10,989	5,703	52	2,741	25	1,840	17	295	2.7	48	0.4	175	1.6
Men	9,968	5,432	54	2,423	24	1,498	15	255	2.6	39	0.4	146	1.5
Women	1,021	271	27	318	31	342	33	40	3.9	9	0.9	29	2.8
Statisticians	2,042	742	36	455	22	623	31	6	0.3	30	1.5	62	3.0
Men	1,834	714	39	399	22	545	30			25	1.4	43	2.3
Women	208	28	13	56	27	78	38	6	2.9	5	2.4	19	9.1
Computer/Info Spec	5,439	1,331	24	1,612	30	1,312	24	102	1.9	160	2.9	406	7.5
Men	4,880	1,273	26	1,473	30	1,127	23	88	1.8	151	3.1	373	7.6
Women	559	58	10	139	25	185	33	14	2.5	9	1.6	33	5.9
Earth Scientists	5,011	2,213	44	991	20	878	18	73	1.5	106	2.1	374	7.5
Men	4,617	2,170	47	913	20	735	16	53	1.1	83	1.8	330	7.1
Women	394	43	11	78	20	143	36	20	5.1	23	5.8	44	11.2
Oceanographers	1,303	370	28	252	19	250	19	12	0.9	20	1.5	261	20.0
Men	1,166	358	31	229	20	201	17	12	1.0	16	1.4	241	20.7
Women	137	12	9	23	17	49	36			4	2.9	20	14.6
Atmospheric Sci	1,061	223	21	271	26	127	12	7	0.7	3	0.3	274	25.8
Men	1,007	217	22	257	26	120	12	7	0.7			253	25.1
Women	54	6	11	14	26	7	13			3	5.6	21	38.9
Biological Sci	40,416	14,788	37	9,077	22	7,137	18	994	2.5	502	1.2	4,956	12.3
Men	31,377	13,397	43	7,077	23	5,025	16	538	1.7	261	0.8	3,060	9.8
Women	9,039	1,391	15	2,000	22	2,112	23	456	5.0	241	2.7	1,896	21.0
Agricultural Sci	8,654	4,192	48	2,061	24	1,512	17	19	0.2	62	0.7	691	8.0
Men	8,053	4,127	51	1,941	24	1,287	16	9	0.1	44	0.5	561	7.0
Women	601	65	11	120	20	225	37	10	1.7	18	3.0	130	21.6
Medical Scientists	15,668	4,990	32	4,048	26	3,734	24	429	2.7	196	1.3	1,298	8.3
Men	11,148	4,261	38	2,774	25	2,176	20	288	2.6	115	1.0	867	7.8
Women	4,520	729	16	1,274	28	1,558	34	141	3.1	81	1.8	431	9.5
Psychologists	22,012	8,510	39	5,747	26	4,038	18	654	3.0	545	2.5	1,475	6.7
Men	15,321	7,266	47	4,098	27	2,176	14	156	1.0	238	1.6	792	5.2
Women	6,691	1,244	19	1,649	25	1,862	28	498	7.4	307	4.6	683	10.2
Economists	11,654	5,349	46	3,102	27	2,462	21	231	2.0	93	0.8	364	3.1
Men	10,445	5,030	48	2,718	26	2,134	20	145	1.4	51	0.5	318	3.0
Women	1,209	319	26	384	32	328	27	86	7.1	42	3.5	46	3.8
Sociologists/Anthro.	9,905	4,041	41	3,054	31	1,887	19	286	2.9	127	1.3	342	3.5
Men	6,964	3,416	49	2,208	32	934	13	119	1.7	71	1.0	122	1.8
Women	2,941	625	21	846	29	953	32	167	5.7	56	1.9	220	7.5
Other Social Sci	22,863	8,715	38	7,398	32	3,913	17	508	2.2	527	2.3	1,083	4.7
Men	18,315	7,872	43	6,084	33	2,384	13	327	1.8	371	2.0	749	4.1
Women	4,548	843	19	1,314	29	1,529	34	181	4.0	156	3.4	334	7.3
Engineers	23,638	11,368	48	4,855	21	3,743	16	168	0.7	312	1.3	1,205	5.1
Men	23,073	11,296	49	4,716	20	3,533	15	154	0.7	306	1.3	1,138	4.9
Women	565	72	13	139	25	210	37	14	2.5	6	1.1	67	11.9

* Includes "Does not Apply" and "No Report". Blanks indicate no cases reported.

SOURCE: Characteristics of Doctoral Scientists and Engineers in the United States: 1987, National Science Foundation (NSF 88-331)

TABLE 5-2

DOCTORAL SCIENTISTS AND ENGINEERS WHO ARE COLLEGE OR UNIVERISTY TEACHERS BY FIELD, RA/MNK AND SEX, 1987

FIELD	Total(1)			Professor			Asso. Prof.			Asst. Prof.			Instructor			Lecturer		
	No.	W	W	No.	W	%W	No.	W	%W	No.	W	%W	No.	W	%W	No.	W	%W
All Fields	156739	24958	15.9	72543	5234	7.2	44282	7670	17.3	30483	8652	28.4	1129	542	48.0	2032	849	41.8
Scientists	139139	24524	17.6	62843	5179	8.2	40041	7536	18.8	27432	8453	30.8	1095	542	49.5	1904	835	43.9
Chemists	11771	1233	10.5	6690	370	5.5	2578	313	12.1	1591	331	20.8	75	13	17.3	187	85	45.5
Physicists/Astronomers	8481	343	4.0	5134	101	2.0	1807	79	4.4	1161	119	10.2	6	3	50.0	107	17	15.9
Mathematical Scientists	12052	1097	9.1	6067	263	4.3	3094	339	11.0	2394	418	17.5	157	19	12.1	142	27	19.0
Computer/Info. Sp.	3983	371	9.3	1055	51	4.8	1523	118	7.7	1168	178	15.2	17	6	35.3	82	5	6.1
Earth Scientists	3962	323	8.2	1955	41	2.1	964	75	7.8	801	131	16.4	8	2	25.0	39	16	41.0
Oceanographers	739	62	8.4	241	3	1.2	221	23	10.4	233	32	13.7	12		0.0			
Atmospheric Scientists	467	23	4.9	131		0.0	186	14	7.5	113	7	6.2				7		0.0
Biological Scientists	27504	5405	19.7	12294	1121	9.1	7491	1641	21.9	5390	1548	28.7	331	179	54.1	233	150	64.4
Agricultural Scientists	4832	326	6.7	2440	59	2.4	1358	65	4.8	780	149	19.1				12	3	25.0
Medical Scientists	10055	3188	31.7	3562	552	15.5	3136	1103	35.2	2541	1248	49.1	180	56	31.1	51	41	80.4
Psychologists	17166	4942	28.8	7518	1104	14.7	5157	1494	29.0	3372	1653	49.0	126	112	88.9	261	217	83.1
Economists	10407	1099	10.6	4814	297	6.2	2859	312	10.9	2328	328	14.1	88	57	64.8	143	29	20.3
Sociologists/Anthro.	8414	2447	29.1	3300	550	16.7	2831	756	26.7	1790	886	49.5	69	69	100	217	98	45.2
Other Social Scientists	19306	3665	19.0	7642	667	8.7	6736	1204	17.9	3770	1425	37.8	26	26	100	423	147	34.8
Engineers	17600	434	2.5	9700	55	0.6	4241	134	3.2	3051	199	6.5	34		0.0	128	14	10.9

(1) Includes "Other" and "No Report". Blanks indicate no cases reported.

TABLE 5-3

DOCTORAL SCIENTISTS & ENGINEERS WHO ARE COLLEGE OR UNIVERSITY TEACHERS BY RACE, FIELD, RANK & SEX, 1987

Field and Minority	Total(1)			Professor			Asso. Prof.			Asst. Prof.			Instructor			Lecturer		
	No.	Wom	W	No.	W	%W	No.	W	%W	No.	W	%W	No.	W	%W	No.	W	%W
All Fields	156739	24958	15.9	72543	5234	7.2	44282	7670	17.3	30483	8652	28.4	1129	542	48.0	2032	849	41.8
White	141371	22589	16.0	66312	4695	7.1	39703	6974	17.6	27048	7858	29.1	906	498	55.0	1790	765	42.7
Black	2745	835	30.4	764	139	18.2	1054	272	25.8	738	361	48.9	17	8	47.1	72	12	16.7
Am. Indian/Aleut	230	33	14.3	104		0.0	80	3	3.8	36	27	75.0	2		0.0			
Asian/Pacific Isl.	11242	1357	12.1	4898	370	7.6	3031	355	11.7	2473	381	15.4	201	33	16.4	130	64	49.2
Hispanic	2246	457	20.3	684	67	9.8	708	129	18.2	652	182	27.9	22	16	72.7	76	15	19.7
Scientists	139139	24524	17.6	62843	5179	8.2	40041	7536	18.8	27432	8453	30.8	1095	542	49.5	1904	835	43.9
White	126630	22228	17.6	57740	4651	8.1	36325	6856	18.9	24668	7693	31.2	885	498	56.3	1672	756	45.2
Black	2506	824	32.9	754	139	18.4	934	272	29.1	636	353	55.5	17	8	47.1	70	12	17.1
Am. Indian/Aleut	227	33	14.5	104		0.0	80	3	3.8	35	27	77.1						
Asian/Pacific Isl.	8731	1297	14.9	3843	359	9.3	2290	339	14.8	1936	355	18.3	190	33	17.4	124	61	49.2
Hispanic	1969	452	23.0	618	67	10.8	535	127	23.7	614	179	29.2	22	16	72.7	76	15	19.7
Physical Scientists	20252	1576	7.8	11824	471	4.0	4385	392	8.9	2752	450	16.4	81	16	19.8	294	102	34.7
White	18333	1348	7.4	10829	420	3.9	4082	320	7.8	2400	407	17.0	15	15	100	206	89	43.2
Black	228	35	15.4	81	19	23.5	35	5	14.3	51	9	17.6	5		0.0	42		0.0
Am. Indian/Aleut	67	1	1.5	36		0.0	30		0.0	1	1	100						
Asian/Pacific Isl.	1527	188	12.3	801	32	4.0	234	63	26.9	284	33	11.6	61	1	1.6	46	13	28.3
Hispanic	244	43	17.6	148	12	8.1	44	16	36.4	36	15	41.7				13		0.0
Mathematical Sci.	12052	1097	9.1	6067	263	4.3	3094	339	11.0	2394	418	17.5	157	19	12.1	142	27	19.0
White	10759	908	8.4	5626	215	3.8	2760	281	10.2	1954	346	17.7	98	17	17.3	130	20	15.4
Black	119	23	19.3	52	12	23.1	51	6	11.8	11	5	45.5				3		0.0
Am. Indian/Aleut	6	3	50.0				3		0.0	3	3	100						
Asian/Pacific Isl.	1122	161	14.3	371	35	9.4	276	51	18.5	405	64	15.8	59	2	3.4	9	7	77.8
Hispanic	165	24	14.5	20	2	10.0	37	4	10.8	94	13	13.8	3		0.0	6	3	50.0

(1) Includes "Other" and "No Report". Blanks indicate no cases reported.

SOURCE: Characteristics of Doctoral Scientists and Engineers in the United States: 1987, National Science Foundation (NSF 88-331)

SOURCE: Characteristics of Doctoral Scientists and Engineers in the United States: 1987, National Science Foundation (NSF 88-331)

TABLE 5-3 (continued)

DOCTORAL SCIENTISTS & ENGINEERS WHO ARE COLLEGE OR UNIVERSITY TEACHERS BY RACE, FIELD, RANK & SEX, 1987

Field and Minority	Total(1)			Professor			Asso. Prof.			Asst. Prof.			Instructor			Lecturer		
	No.	Wom	W	No.	W	%W	No.	W	%W	No.	W	%W	No.	W	%W	No.	W	%W
Environmental Sci.	5168	408	7.9	2327	44	1.9	1371	112	8.2	1147	170	14.8	20	2	10.0	46	16	34.8
White	4896	372	7.6	2205	30	1.4	1301	101	7.8	1098	163	14.8	20	2	10.0	23	16	69.6
Black	22	3	13.6	9		0.0	3	3	100	8		0.0						
Am. Indian/Aleut	2		0.0				2		0.0									
Asian/Pacific Isl.	240	30	12.5	113	14	12.4	60	8	13.3	38	4	10.5				23		0.0
Hispanic	84		0.0	29		0.0	20		0.0	29		0.0						
Life Scientists	42391	8919	21.0	18296	1732	9.5	12085	2809	23.2	8711	2945	33.8	511	235	46.0	296	194	65.5
White	38404	8115	21.1	16600	1502	9.0	10830	2569	23.7	7951	2704	34.0	452	209	46.2	292	190	65.1
Black	657	242	36.8	230	60	26.1	278	84	30.2	126	86	68.3	8	4	50.0			
Am. Indian/Aleut	57	16	28.1	38		0.0	1	1	100	15	12	80.0						
Asian/Pacific Isl.	3006	492	16.4	1339	160	11.9	876	119	13.6	550	135	24.5	51	22	43.1	4	4	100
Hispanic	581	156	26.9	220	33	15.0	172	45	26.2	139	50	36.0	11	8	72.7	5	5	100
Social/Behav. Sci.	55293	12153	22.0	23274	2618	11.2	17583	3766	21.4	11260	4292	38.1	309	264	85.4	1044	491	47.0
White	50627	11150	22.0	21463	2435	11.3	15983	3478	21.8	10263	3917	38.2	294	249	84.7	939	436	46.4
Black	1472	521	35.4	382	48	12.6	561	174	31.0	438	253	57.8	4	4	100	25	12	48.0
Am. Indian/Aleut	95	13	13.7	30	0	0.0	44	2	4.5	16	11	68.8	0	0		0	0	
Asian/Pacific Isl.	2501	390	15.6	1183	116	9.8	702	87	12.4	516	97	18.8	8	8	100	42	37	88.1
Hispanic	836	226	27.0	173	20	11.6	252	62	24.6	297	98	33.0	8	8	100	52	7	13.5
Engineers	17600	434	2.5	9700	55	0.6	4241	134	3.2	3051	199	6.5	34		0.0	128	14	10.9
White	14741	361	2.4	8572	44	0.5	3378	118	3.5	2380	165	6.9	21		0.0	118	9	7.6
Black	239	11	4.6	10		0.0	120		0.0	102	8	7.8				2		0.0
Am. Indian/Aleut	3		0.0							1		0.0	2		0.0			
Asian/Pacific Isl.	2511	60	2.4	1055	11	1.0	741	16	2.2	537	26	4.8	11		0.0	6	3	50.0
Hispanic	277	5	1.8	66		0.0	173	2	1.2	38	3	7.9						

(1) Includes "Other" and "No Report". Blanks indicate no cases reported.

SOURCE: Biennial Survey of Doctorates, 1987, National Research Council, unpublished.

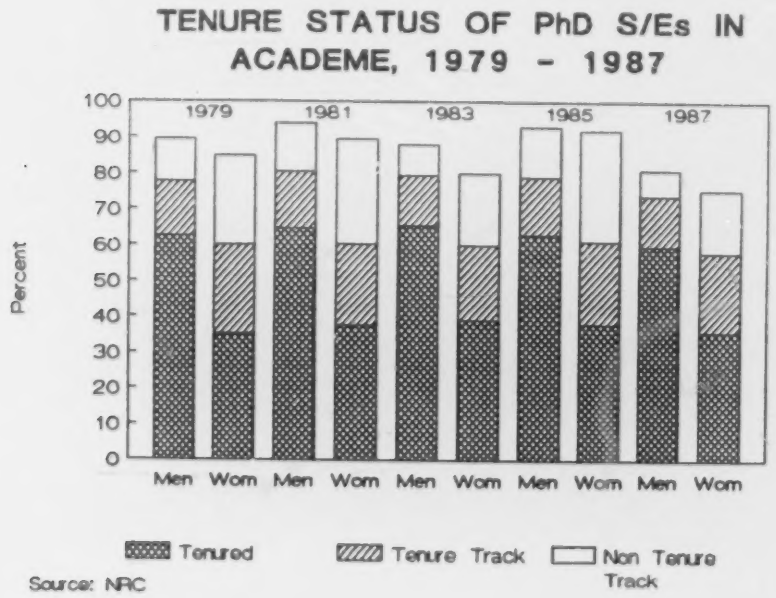
TABLE 5-4

TENURE STATUS OF ACADEMICALLY EMPLOYED SCIENCE/ENGINEERING DOCTORATES BY FIELD OF PhD AND SEX, 1987

Field	Number(1)			% Tenured		% In Tenure Track		% Not In Tenure Tr.	
	Men	Women	%W	Men	Women	Men	Women	Men	Women
All S/E Fields	174514	34870	16.7	59.8	36.1	14.1	22.0	7.2	17.5
Chemists	13306	1798	11.9	64.4	34.1	8.8	13.5	6.0	21.0
Physicists/Astronomers	13040	585	4.3	51.2	28.4	8.0	18.5	8.0	16.9
Mathematical Scientists	11802	1229	9.4	70.7	52.0	14.3	26.9	4.1	8.2
Computer/Information Sp.	4880	559	10.3	42.2	26.8	25.9	33.3	7.4	7.9
Environmental Scientists	6790	585	7.9	54.3	26.0	15.4	25.1	8.4	20.9
Biological Scientists	31377	9039	22.4	56.1	28.3	13.9	17.0	10.1	24.2
Agricultural Scientists	8053	601	6.9	65.2	26.6	15.1	31.1	7.1	18.0
Medical Scientists	11148	4520	28.8	46.3	32.0	17.4	17.2	11.8	10.0
Psychologists	15321	6691	30.4	62.6	37.7	11.3	20.3	8.0	15.5
Social Scientists	35724	8698	19.6	67.5	46.4	14.7	23.1	4.9	13.6
Engineers	23073	565	2.4	57.7	25.5	16.6	40.9	5.2	12.7

(1) Includes "Other" and "No Report".

CHART 5-1



SOURCE: Biennial Survey of Doctorates, 1987, National Research Council, unpublished.

TABLE 5-5

TENURE STATUS OF ACADEMICALLY EMPLOYED SCIENCE/ENGINEERING PhDs, 1987

	Total Employed				Tenured			In Tenure Track			Not In Tenure Tr.		
Field and Minority	Number	No Wo	%W	V%	Number	H%	V%	Number	H%	V%	umber	H%	V%
All Fields	209,384	34870	16.7	100	116,941	55.9	100	32,211	15.4	100	18,610	8.9	100
White	187,937	31235	16.6	89.8	107,482	57.2	91.9	28,220	15.0	87.6	16,232	8.6	87.2
Black	3,699	1084	29.3	1.8	1,636	44.2	1.4	861	23.3	2.7	304	8.2	1.6
Am. Indian/Aleut	316	54	17.1	0.2	205	64.9	0.2	44	13.9	0.1	14	4.4	0.1
Asian/Pacific Isl.	16,021	2319	14.5	7.7	6,848	42.7	5.9	2,816	17.6	8.7	1,964	12.3	10.6
Hispanic	3,472			1.7	1,561	45.0	1.3	664	19.1	2.1	377	10.9	2.0
Scientists	185,746	34305	18.5	100	103,492	55.7	100	28,143	15.2	100	17,342	9.3	100
White	168,292	30767	18.3	80.4	95,734	56.9	81.9	25,272	15.0	78.5	15,292	9.1	82.2
Black	3,441	1073	31.2	1.6	1,581	45.9	1.4	669	19.4	2.1	299	8.7	1.6
Am. Indian/Aleut	301	54	17.9	0.1	205	68.1	0.2	44	14.6	0.1	12	4.0	0.1
Asian/Pacific Isl.	12,411	2236	18.0	5.9	5,251	42.3	4.5	1,911	15.4	5.9	1,660	13.4	8.9
Hispanic	3,047			1.6	1,281	42.0	1.2	625	20.5	2.2	374	12.3	2.2
Physical Scientists	28,729	2383	8.3	100	16,028	55.8	100	2,541	8.8	100	2,327	8.1	100
White	25,673	2011	7.8	89.4	14,895	58.0	92.9	2,246	8.7	88.4	1,917	7.5	82.4
Black	284	37	13.0	1.0	98	34.5	0.6	44	15.5	1.7	47	16.5	2.0
Am. Indian/Aleut	69	3	4.3	0.2	63	91.3	0.4	4	5.8	0.2		0.0	0.0
Asian/Pacific Isl.	2,551	323	12.7	8.9	895	35.1	5.6	227	8.9	8.9	363	14.2	15.6
Hispanic	453			1.6	227	50.1	1.4	38	8.4	1.5	47	10.4	2.0
Mathematical Scientists	13,031	1229	9.4	100	8,984	68.9	100	2,022	15.5	100	584	4.5	100
White	11,656	1025	8.8	89.4	8,289	71.1	92.3	1,730	14.8	85.6	414	3.6	70.9
Black	140	29	20.7	1.1	110	78.6	1.2	10	7.1	0.5	2	1.4	0.3
Am. Indian/Aleut	6	3	50.0	0.0				6	100	0.3			
Asian/Pacific Isl.	1,176	168	14.3	9.0	558	47.4	6.2	255	21.7	12.6	168	14.3	28.8
Hispanic	213			1.6	94	44.1	1.0	92	43.2	4.5	14	6.6	2.4
Environmental Scientist	7,375	585	7.9	100	3840	52.1	100	1,192	16.2	100	690	9.4	100
White	6,927	523	7.6	93.9	3682	53.2	95.9	1,109	16.0	93.0	635	9.2	92.0
Black	69	3	4.3	0.9	3	4.3	0.1	17	24.6	1.4	6	8.7	0.9
Am. Indian/Aleut	3	1	33.3	0.0				2	66.7	0.2			
Asian/Pacific Isl.	361	55	15.2	4.9	148	41.0	3.9	61	16.9	5.1	44	12.2	6.4
Hispanic	144			2.0	64	44.4	1.7	20	13.9	1.7	17	11.8	2.5
Life Scientists	64,738	14719	22.7	100	32179	49.7	100	10,589	16.4	100	8,121	12.5	100
White	58,196	13107	22.5	89.9	29685	51.0	92.2	9,639	16.6	91.0	7,117	12.2	87.6
Black	982	326	33.2	1.5	416	42.4	1.3	193	19.7	1.8	92	9.4	1.1
Am. Indian/Aleut	74	26	35.1	0.1	31	41.9	0.1	10	13.5	0.1	12	16.2	0.1
Asian/Pacific Isl.	5,124	1188	23.2	7.9	1899	37.1	5.9	670	13.1	6.3	872	17.0	10.7
Hispanic	959			1.5	348	36.3	1.1	201	21.0	1.9	135	14.1	1.7
Social/Behav. Sci.	66,434	15389	23.2	100	40253	60.6	100	10,347	15.6	100	5,216	7.9	100
White	60,953	14101	23.1	91.7	37140	60.9	92.3	9,321	15.3	90.1	4,844	7.9	92.9
Black	1,955	678	34.7	2.9	948	48.5	2.4	402	20.6	3.9	152	7.8	2.9
Am. Indian/Aleut	149	21	14.1	0.2	110	73.8	0.3	22	14.8	0.2			
Asian/Pacific Isl.	3,197	502	15.7	4.8	1751	54.8	4.3	698	21.8	6.7	215	6.7	4.1
Hispanic	1,141			1.7	449	39.4	1.1	254	22.3	2.5	155	13.6	3.0
Engineers	23,638	565	2.4	100	13449	56.9	100	4,068	17.2	100	1,268	5.4	100
White	19,645	468	2.4	83.1	11748	59.8	87.4	2,948	15.0	72.5	940	4.8	74.1
Black	258	11	4.3	1.1	55	21.3	0.4	192	74.4	4.7	5	1.9	0.4
Am. Indian/Aleut	15		0.0	0.1							2	13.3	0.2
Asian/Pacific Isl.	3,610	83	2.3	15.3	1597	44.2	11.9	905	25.1	22.2	304	8.4	24.0
Hispanic	425			1.8	280	65.9	2.1	39	9.2	1.0	3	0.7	0.2

(1) Includes "Other" and "No Report". Blanks indicate no cases reported.

SOURCE: Humanities Doctorates in the United States: 1987 Profile, National Research Council

TABLE 5-6

ACADEMICALLY EMPLOYED HUMANITIES DOCTORATES, BY ACADEMIC POSITION, FIELD AND SEX, 1987

Year of Ph.D. and Academic Position	All Fields		Field of Doctorate							
			Eng/Amer Lang and Lit		History		Other Lang and Lit		Other Humanities	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Total, 1944-1986 Ph.D.s (N)	46,700	19,400	11,300	6,200	12,500	2,400	7,800	5,300	15,100	5,500
Faculty	90.5	80.2	91.1	78.2	87.8	80.5	92.6	80.9	91.2	81.8
Professor	48.3	23.9	52.1	27.1	54.7	29.8	41.5	21.0	43.6	20.4
Associate Professor	27.7	26.7	26.2	25.9	21.9	23.7	32.8	29.3	31.1	26.5
Assistant Professor	12.9	25.4	11.1	19.4	9.5	22.9	16.9	27.2	15.0	31.8
Instructor	1.6	4.2	1.6	5.8	1.8	4.0	1.3	3.4	1.5	3.2
Lecturer	1.1	5.1	1.2	7.7	0.7	2.8	2.1	5.2	0.9	3.1
Adjunct	2.1	5.4	1.3	4.9	3.5	6.9	1.6	4.3	1.8	6.3
Other Faculty	2.7	3.5	2.8	2.8	4.3	3.2	1.5	3.9	1.8	4.2
Does Not Apply	2.4	3.3	2.6	3.8	2.8	4.3	1.3	3.0	2.5	2.7
Postdoctoral Appointment	0.6	1.4	0.6	1.7	0.4	1.7	0.5	1.5	0.7	0.7
No Report	0.7	1.0	0.4	0.8	0.5	0.6	0.5	1.2	1.1	1.1
Total, 1981-1986 Ph.D.s (N)	6,800	5,600	1,400	1,600	1,300	600	1,100	1,300	2,900	2,100
Faculty	79.5	70.9	74.2	59.0	79.0	72.7	84.2	73.1	80.4	78.0
Professor	5.9	3.4	4.5	5.3	12.1	2.9	2.8	2.2	5.1	2.8
Associate Professor	15.2	8.8	11.8	5.5	5.0	10.7	12.1	6.9	22.8	11.8
Assistant Professor	54.2	52.1	53.5	36.8	53.6	52.6	66.1	59.4	50.2	59.1
Instructor	4.1	6.6	4.5	11.5	8.4	6.5	3.2	4.6	2.4	4.3
Lecturer	4.0	8.4	7.3	16.1	2.1	4.7	5.0	7.4	2.9	4.3
Adjunct	2.9	9.0	4.1	10.7	0.6	8.9	0.5	8.4	4.2	8.0
Other Faculty	4.8	3.7	6.2	5.1	8.4	0.2	6.6	2.9	1.7	4.2
Does Not Apply	4.7	3.8	3.6	5.3	5.8	5.0	1.9	2.4	5.9	3.1
Postdoctoral Appointment	2.7	2.8	4.3	3.8	2.3	6.2	1.7	3.3	2.5	0.7
No Report	1.4	1.5	0.2	0.0	1.8	2.3	0.0	2.4	2.3	1.7

NOTE: Other Languages & Literature = Classical Languages and Modern Languages and Literature. Other Humanities = Art History, Music, Speech/Theater, Philosophy, and "Other Humanities."

SOURCE: Humanities Doctorates in the United States: 1987 Profile, National Research Council

TABLE 5-7

TENURE STATUS OF ACADEMICALLY EMPLOYED HUMANITIES PHDS BY FIELD, AGE AND SEX, 1987

Age and Tenure	All Fields		Field of Doctorate							
			Eng/Amer Lang and Lit		History		Other Lang and Lit		Other Humanities	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Total Employed (N)	46,700	19,400	11,300	6,200	12,500	2,490	7,800	5,300	15,100	5,500
Tenured	73.6	49.1	75.4	52.2	73.2	50.6	74.3	48.3	72.2	45.6
Not Tenured	23.8	46.9	22.3	43.8	24.8	47.5	22.3	47.7	24.9	49.5
Tenure Track	10.3	18.6	10.6	14.2	7.2	19.0	11.9	20.8	11.8	21.5
Non-Tenure Track	4.4	13.6	1.8	13.3	5.2	11.0	4.6	13.5	5.4	15.2
Tenure Not Applicable	9.2	14.7	9.9	16.4	12.4	17.5	5.8	13.5	7.6	12.8
No Report	2.6	4.0	2.3	4.0	2.0	2.0	3.5	4.0	2.9	4.9
Age 35 and Under (N)	2,400	2,000	600	600	400	200	400	500	1,000	700
Tenured	12.1	5.0	5.4	6.2	1.3	0.0	13.7	4.6	19.5	5.8
Not Tenured	84.5	91.2	94.6	88.7	92.7	99.1	86.3	88.9	74.8	92.5
Tenure Track	57.1	55.7	69.5	56.7	48.8	76.6	62.5	48.2	50.6	53.5
Non-Tenure Track	17.2	22.1	15.6	14.3	29.4	0.0	20.5	28.2	12.4	32.1
Tenure Not Applicable	10.3	13.3	9.6	17.7	14.4	22.5	3.3	12.5	11.8	6.9
No Report	3.4	3.9	0.0	5.2	6.0	0.9	0.0	6.5	5.7	1.8
Age 36 to 45 (N)	14,900	7,900	3,700	2,100	3,400	900	2,500	2,300	5,300	2,500
Tenured	59.9	42.0	68.4	46.2	48.5	42.6	63.2	39.9	59.8	40.2
Not Tenured	37.0	54.0	27.1	50.4	49.2	55.9	34.9	56.2	37.2	54.4
Tenure Track	18.7	23.9	17.9	17.0	17.5	23.6	21.4	29.6	18.6	24.8
Non-Tenure Track	8.2	16.5	2.5	17.1	13.1	19.0	8.1	14.7	9.1	16.6
Tenure Not Applicable	10.1	13.6	6.7	16.3	18.5	13.2	5.4	12.0	9.4	13.1
No Report	3.1	3.9	4.5	3.4	2.3	1.5	1.9	3.9	3.1	5.4
Age 46 and Older (N)	29,200	9,500	6,900	3,500	8,700	1,300	4,900	2,500	8,600	2,200
Tenured	85.8	64.4	85.2	63.8	86.0	65.0	84.9	64.9	86.5	64.3
Not Tenured	11.9	31.6	13.5	32.0	12.3	32.5	10.5	31.5	11.0	30.7
Tenure Track	2.1	6.3	1.5	5.0	1.3	5.7	3.0	7.1	2.9	7.9
Non-Tenure Track	1.3	9.3	0.2	10.8	1.1	6.9	1.5	9.2	2.3	8.6
Tenure Not Applicable	8.5	16.0	11.8	16.2	9.9	19.9	6.0	15.2	5.9	14.2
No Report	2.3	4.0	1.3	4.2	1.7	2.5	4.5	3.6	2.5	5.0

NOTE: Other Languages & Literature = Classical Languages and Modern Languages and Literature. Other Humanities = Art History, Music, Speech/Theater, Philosophy, and "Other Humanities."

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SOURCE: National Science Foundation, SRS

TABLE 5-8

SCIENCE/ENGINEERING POSTDOCTORATES IN PHD-GRANTING INSTITUTIONS BY FIELD AND CITIZENSHIP, 1985-1988

Field	U.S. CITIZENS				FOREIGN CITIZENS			
	1985	1986	1987	1988	1985	1986	1987	1988
Total, all surveyed fields	13,585	14,131	14,272	14,666	8,897	9,718	10,799	11,783
Total, science/engineering fields	9,768	10,150	10,411	10,559	7,220	7,824	8,514	9,318
Engineering, total	440	458	496	574	907	940	946	1,102
Aerospace	10	15	13	20	41	33	30	49
Agricultural	6	4	7	12	9	13	22	19
Biomedical	27	36	32	26	20	16	12	21
Chemical	55	63	97	88	218	232	243	323
Civil	49	46	57	92	73	94	118	115
Electrical	76	59	103	70	100	113	72	116
Engineering science	41	28	21	23	49	39	21	15
Industrial	16	19	19	9	2	6	7	9
Mechanical	61	94	69	76	146	147	147	140
Metallurgical/materials	47	56	70	72	198	193	212	253
Mining	19	19	20	53	0	6	6	10
Nuclear	12	9	7	6	19	22	13	11
Petroleum	1	0	1	0	5	1	9	8
Engineering, n.e.c.	20	10	10	13	27	25	34	34
Sciences, total	9,328	9,692	9,915	9,985	6,313	6,884	7,568	8,216
Physical sciences	2,016	2,203	2,175	2,256	2,501	2,640	2,778	2,931
Astronomy	95	88	76	90	43	45	49	57
Chemistry	1,277	1,292	1,253	1,328	1,718	1,859	1,993	2,101
Physics	669	796	817	812	733	731	731	766
Physical sciences, n.e.c.	35	27	29	26	7	5	5	7
Environmental sciences	250	276	258	319	125	141	162	189
Atmospheric sciences	33	32	41	41	15	11	17	30
Geosciences	136	153	134	169	90	89	105	111
Oceanography	64	67	56	82	15	31	25	34
Environmental sciences, n.e.c.	17	19	27	28	5	10	15	14
Mathematical sciences	112	100	118	147	114	101	110	133
Computer sciences	45	45	65	52	29	29	35	39
Agricultural sciences	215	225	253	264	142	163	161	148
Biological sciences	6,005	6,148	6,360	6,266	3,221	3,633	4,160	4,631
Anatomy	234	239	219	243	76	103	131	182
Biochemistry	1,341	1,142	1,197	1,107	825	812	860	954
Biology	843	735	809	791	280	366	380	441
Biometry/epidemiology	49	65	53	55	13	34	65	21
Biophysics	72	79	59	61	29	54	57	63
Botany	268	294	310	311	103	110	125	130
Cell biology	486	514	577	525	237	298	345	353
Ecology	29	28	32	25	8	9	7	8
Entomology/parasitology	103	99	138	110	36	45	44	66
Genetics	253	235	332	313	114	143	161	191
Microbiology	738	744	744	792	430	511	566	608
Nutrition	110	100	99	60	83	95	78	81
Pathology	397	439	441	439	239	270	324	380
Pharmacology	556	566	505	563	345	368	459	546
Physiology	532	557	599	580	301	329	420	467
Zoology	179	176	162	159	33	41	52	50
Biosciences, n.e.c.	94	87	104	102	86	55	96	110
Psychology	444	470	385	424	54	50	73	73
Social sciences	241	225	301	257	127	127	89	72
Agricultural economics	21	17	14	14	10	18	17	6
Anthropology	49	38	50	48	8	14	4	8
Economics (except agricultural)	10	7	21	6	9	15	15	3
Geography	2	2	15	19	8	9	3	3
History and philosophy of science	6	7	13	11	5	4	6	5
Linguistics	15	12	33	17	11	9	9	14
Political science	12	43	44	40	30	23	10	10
Sociology	70	68	74	57	22	16	19	16
Sociology/anthropology	0	1	3	0	2	0	0	1
Social sciences, n.e.c.	54	30	34	45	22	19	6	6
Health fields, total	3,817	3,981	3,861	4,107	1,677	1,894	2,295	2,470
Dentistry	157	75	61	88	67	44	40	43
Neurology	225	232	241	283	107	137	179	191
Nursing	16	16	48	54	1	0	1	0
Pharmaceutical sciences	102	144	106	137	170	186	239	259
Preventive medicine/community health	130	132	124	101	37	62	46	46
Speech pathology/audiology	16	10	23	30	2	2	2	4
Veterinary sciences	51	68	80	68	18	32	32	34
Clinical medicine, n.e.c.	3,032	3,215	3,101	3,239	1,253	1,404	1,721	1,856
Health related, n.e.c.	88	89	77	77	22	27	25	37

 SOURCE: *Women and Minorities in Science and Engineering,* National Science Foundation

TABLE 5-9

POSTDOCTORATES IN SCIENCE AND ENGINEERING BY FIELD, SEX, AND RACE/ETHNICITY 1977-87

Field	Total	Men	Women	White	Black	Asian	Native American	Hispanic
				1977				
Total, all fields	9,755	7,738	2,017	8,172	104	1,354	6	136
Scientists, total	9,353	7,351	2,002	7,931	99	1,211	6	135
Physical	2,577	2,262	315	2,078	14	459	1	29
Mathematical	78	69	9	71	0	7	0	0
Computer specialists	43	43	0	38	0	5	0	0
Environmental	357	324	33	320	0	29	2	7
Life	5,239	3,910	1,329	4,426	74	685	3	67
Psychologists	550	375	175	532	9	9	0	32
Social	509	368	141	466	2	17	0	0
Engineers, total	402	387	15	241	5	143	0	1
				1983				
Total, all fields	10,945	7,886	3,059	9,443	215	1,175	11	270
Scientists, total	10,620	7,588	3,032	9,318	215	975	11	212
Physical	1,951	1,674	277	1,631	69	242	0	30
Mathematical	103	82	21	101	0	2	0	0
Computer specialists	84	62	22	84	0	0	0	0
Environmental	326	278	48	288	0	17	0	7
Life	6,853	4,634	2,219	6,080	52	674	10	138
Psychologists	492	285	207	450	26	12	0	26
Social	811	573	238	684	68	28	1	11
Engineers, total	325	298	27	125	0	200	0	58
				1985				
Total, all fields	11,796	8,406	3,390	9,830	213	1,629	51	249
Scientists, total	11,398	8,031	3,367	9,691	213	1,370	51	247
Physical	2,303	1,968	335	1,723	94	484	0	55
Mathematical	117	109	8	113	2	2	0	4
Computer specialists	13	11	2	13	0	0	0	0
Environmental	373	331	42	312	4	35	0	24
Life	7,410	4,939	2,471	6,478	92	788	15	129
Psychologists	774	387	387	736	10	15	7	31
Social	408	286	122	316	11	46	29	4
Engineers, total	398	375	23	139	0	259	0	2
				1987				
Total, all fields	12,296	8,737	3,559	10,068	233	1,853	24	275
Scientists, total	11,677	8,147	3,530	9,725	220	1,598	24	260
Physical	2,533	2,143	390	1,802	44	650	0	56
Mathematical	286	259	27	219	4	60	0	9
Computer specialists	143	138	5	140	0	3	0	0
Environmental	427	354	73	380	0	46	1	1
Life sciences	7,263	4,693	2,570	6,257	119	808	12	167
Psychologists	664	334	330	623	16	22	0	24
Social	361	226	135	304	37	9	11	3
Engineers, total	619	590	29	343	13	255	0	15

SOURCE: *Digest of Education Statistics 1989,* U.S. Department of Education

TABLE 5-10

FULL-TIME FACULTY WITH TENURE BY TYPE OF INSTITUTION, RANK, SEX, AND CONTROL 1981-82 - 1987-88

Academic year, type, and control of institution	Percent with tenure, by rank							Percent with tenure, by sex	
	All ranks	Professor	Associate professor	Assistant professor	Instructor	Lecturer	No academic rank	Men	Women
1	2	3	4	5	6	7	8	9	10
1980-81									
All institutions	64.8	95.8	82.9	27.9	9.2	11.9	77.4	70.0	49.7
4-year	62.7	95.8	82.2	24.1	6.6	10.7	24.7	68.3	44.0
University	64.5	96.7	83.7	15.3	3.4	4.3	3.5	70.0	41.0
Other 4-year	61.3	94.9	81.2	29.7	7.1	17.8	32.4	67.0	45.5
2-year	74.5	95.6	89.2	58.9	19.8	34.8	81.1	78.8	66.6
Public institutions	68.0	96.6	85.9	32.5	11.8	14.3	79.4	72.8	54.0
4-year	65.7	96.6	85.3	27.6	8.7	12.8	12.2	71.1	47.5
University	66.0	96.9	86.5	16.8	6.1	4.9	4.5	71.3	42.8
Other 4-year	65.5	96.3	84.4	35.5	10.0	21.4	17.2	70.9	50.2
2-year	75.2	95.9	89.5	59.5	20.3	35.8	81.8	79.3	67.5
Private institutions	55.9	93.8	75.2	17.5	3.0	1.5	43.4	62.2	37.2
4-year	56.0	93.8	75.2	17.4	2.8	1.5	37.5	62.2	37.2
University	60.4	96.3	75.8	11.5	3.5	1.8	0.6	66.3	36.5
Other 4-year	53.8	92.0	74.9	20.2	2.6	1.2	43.4	59.8	37.4
2-year	49.5	84.7	77.3	35.2	8.8	0.0	52.2	57.3	39.5
1982-83									
All institutions	65.4	95.6	82.1	26.8	9.0	11.0	77.2	70.4	51.0
4-year	63.2	95.6	81.4	23.1	6.2	9.8	23.6	68.9	45.2
University	65.5	96.8	83.8	14.6	4.9	3.6	0.7	70.9	42.9
Other 4-year	61.8	94.4	79.8	28.4	6.7	16.3	32.7	67.3	46.4
2-year	75.0	95.3	88.9	58.4	19.9	32.3	81.2	78.9	68.2
Public institutions	68.9	96.4	85.5	31.8	11.3	13.3	79.2	73.6	55.7
4-year	66.7	96.5	84.9	27.0	7.9	11.9	11.1	72.0	49.0
University	67.5	97.2	87.0	16.5	5.5	4.3	0.9	72.7	45.0
Other 4-year	66.1	95.7	83.3	34.6	9.0	19.1	19.4	71.4	51.4
2-year	75.7	95.7	89.1	59.0	20.3	32.6	81.7	79.4	69.0
Private institutions	55.9	93.4	73.8	16.3	3.6	1.2	43.3	62.0	38.1
4-year	56.0	93.5	73.8	16.1	3.2	1.2	35.8	62.1	38.0
University	60.3	95.8	74.9	10.3	3.2	1.4	0.0	66.0	37.8
Other 4-year	53.7	91.9	73.2	18.8	3.2	0.9	40.9	59.8	38.1
2-year	49.9	78.9	77.2	35.6	13.7	0.0	56.7	55.8	42.2
1985-86									
All institutions	66.0	95.8	82.2	25.1	10.7	9.3	75.3	71.3	51.7
4-year	64.1	95.8	81.5	21.5	5.7	8.3	20.0	69.9	46.4
University	66.8	97.0	85.0	13.0	5.0	3.2	0.3	72.3	45.4
Other 4-year	62.2	94.8	79.2	26.6	6.0	13.0	27.0	68.1	46.9
2-year	75.1	95.1	88.5	56.4	27.3	28.6	80.4	79.1	68.5
Public institutions	68.9	96.5	85.4	29.1	13.4	10.9	77.2	73.9	55.8
4-year	66.9	96.6	84.9	24.4	7.3	9.7	11.1	72.5	49.3
University	68.1	97.1	87.8	14.0	5.8	3.4	0.3	73.5	48.4
Other 4-year	66.0	96.2	82.7	31.8	8.0	15.0	18.3	71.8	51.1
2-year	75.7	95.2	89.0	57.4	29.0	29.7	80.8	79.5	69.2
Private institutions	57.6	93.8	73.8	16.0	2.7	2.1	40.3	63.9	40.3
4-year	57.7	93.9	73.9	15.9	2.5	2.1	32.1	64.0	40.3
University	63.0	96.7	76.6	10.1	2.2	2.8	0.0	68.4	42.7
Other 4-year	55.1	92.0	72.8	18.3	2.5	1.0	34.8	61.6	39.5
2-year	48.4	89.9	63.6	24.9	9.3	0.0	57.5	56.1	39.3
1987-88									
All institutions	65.0	95.8	81.5	22.2	7.1	8.8	73.4	70.5	50.2
4-year	63.6	95.9	81.0	19.4	4.7	7.8	20.6	69.6	46.1
University	66.3	97.0	84.9	11.1	3.8	3.2	1.1	71.9	45.1
Other 4-year	61.7	94.9	78.4	24.3	4.9	11.7	33.3	67.8	46.6
2-year	74.0	94.1	87.1	54.1	18.4	32.9	79.9	78.1	67.5
Public institutions	67.4	96.2	84.2	25.8	8.8	10.3	75.4	72.8	53.4
4-year	65.9	96.4	83.8	22.0	5.8	9.1	11.7	71.7	48.3
University	67.5	97.2	87.6	12.0	4.3	3.1	0.8	73.2	45.8
Other 4-year	64.6	95.8	80.8	29.0	6.4	13.3	23.1	70.4	49.7
2-year	74.6	94.2	87.5	55.1	18.7	33.1	80.4	78.6	68.3
Private institutions	58.3	94.5	74.8	14.4	2.3	2.5	41.8	64.6	41.6
4-year	58.4	94.5	74.9	14.3	2.1	2.5	35.0	64.7	41.6
University	62.8	96.6	76.9	9.0	2.0	3.3	2.4	68.2	43.2
Other 4-year	56.1	93.0	73.9	16.7	2.2	1.3	43.3	62.5	41.0
2-year	49.3	91.0	63.3	26.9	10.0	0.0	57.3	57.4	40.7

NOTE.—Data exclude imputations for nonrespondent institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Faculty Salaries, Tenure, and Benefits;* and Integrated Postsecondary Education Data System (IPEDS), "Salaries, Tenure, and Fringe Benefits of Full-Time Instructional Faculty" survey. (This table was prepared May 1989.)

SOURCE: 1980 Fact Book for Academic Administrators, American Council in Education and Digest of Education Statistics, 1981, National Center for Education Statistics and Profile of Women College Presidents, Women's College Coalition and American Council on Education, Office of Women in Higher Education, December 1984, September 1985 and 1990.

TABLE 5-11

WOMEN COLLEGE PRESIDENTS BY TYPE AND CONTROL OF INSTITUTION, 1975 – 1989

YEAR	All Institutions		Public Institutions		Private Institutions		Women's Colleges		Members of Religious Orders
	No.	%+	No.	%+	No.	%+	No.	%+	No.
Four-Year and Two-Year Institutions									
1975	148	4.8	16	1.1	132	8.2			105
1976	154	5.0	16	1.1	138	8.6	71	56.8	
1977	156	5.0	19	1.3	137	8.3	87	71.3	
1978	177	5.6	31	2.1	146	8.7	75	64.1	
1980	209	6.9	62	4.2	157	9.4	78	67.8	
1981	231	7.2	72	4.8	159	9.2	80	70.2	98
1982	244	7.5	78	5.0	166	9.5	84	73.7	99
1983	254	7.8	85	5.7	169	9.6	85	74.6	97
1984	286	8.8	104	6.9	182	10.4	83	74.8	93
1987	296	8.7	112	7.5	184	10.1			86
1989	328	9.3	146	9.4	182	9.3			77
Four-Year Institutions									
1975	103	5.4	5	0.9	98	7.2			79
1976	110	5.7	3	0.5	107	7.8	57	58.8	
1977	112	5.7	5	0.9	107	7.7	72	75.0	
1978	123	6.3	9	1.6	114	8.1	62	66.7	
1980	145	7.4	21	3.8	124	8.8	60	67.4	
1981	162	8.3	25	4.5	135	9.5	61	68.5	86
1982	152	8.1	25	4.5	127	8.9	62	69.7	73
1983	152	7.7	28	5.0	124	8.7			
1984	166	8.4	32	5.7	134	9.4			
1987	195	9.4	39	2.6	156	8.5			
1989	195	9.2	44	7.4	151	9.9			
Two-Year Institutions									
1975	45	3.9	11	1.2	34	14.2			26
1976	44	3.8	13	1.4	31	13.0	14	50.0	
1977	44	3.7	14	1.5	30	12.0	15	57.7	
1978	54	4.5	22	2.4	32	11.3	13	54.2	
1980	64	5.4	41	4.4	33	12.3	18	18.3	
1981	69	5.4	47	4.9	24	7.1	19	19.4	12
1982	92	7.2	53	5.6	39	11.6	22	22.4	26
1983	102	8.0	57	6.1	45	13.4			
1984	120	9.4	72	7.7	48	14.4			
1987	101	7.6	73	4.8	28	1.5			
1989	133	9.3	102	10.6	31	7.2			

Minority Women College Presidents

Year	Blacks	Hispanics	Am Indian	Asian	Total
1984					26
1987	22	13	4	1	40
1989	20	16	5	2	43

Notes: Blanks indicate no information available in source. * Institutions with enrollment of at least 90% women. + Institutions headed by women as a percentage of all institutions of the type indicated. Annual directories published by NCES are the source of data on the number of institutions.

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 5-12

FULL TIME FACULTY BY RACE/ETHNICITY, ACADEMIC RANK AND SEX, FALL 1985

Academic rank and sex	Total	Race/ethnicity				
		White non-Hispanic	Black non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/ Alaskan Native
1	2	3	4	5	6	7
Men and women, all ranks	**464,072**	**417,036**	**19,227**	**7,704**	**18,370**	**1,735**
Professors	129,269	119,868	2,859	1,455	4,788	299
Associate professors	111,092	100,630	4,201	1,727	4,130	404
Assistant professors	111,308	97,496	5,895	1,968	5,469	480
Instructors	75,411	66,799	4,572	1,798	1,806	436
Lecturers	9,766	8,477	631	251	360	47
Other faculty	27,226	23,766	1,069	505	1,817	69
Men, all ranks	**336,009**	**303,953**	**10,456**	**5,360**	**14,846**	**1,394**
Professors	114,258	106,335	2,058	1,206	4,395	264
Associate professors	85,156	77,483	2,595	1,280	3,451	347
Assistant professors	71,463	62,582	2,923	1,316	4,240	402
Instructors	43,251	38,592	2,107	1,141	1,105	306
Lecturers	5,098	4,436	304	117	212	29
Other faculty	16,783	14,525	469	300	1,443	46
Women, all ranks	**128,063**	**113,083**	**8,771**	**2,344**	**3,524**	**341**
Professors	15,011	13,533	801	249	393	35
Associate professors	25,936	23,147	1,606	447	679	57
Assistant professors	39,845	34,914	2,972	652	1,229	78
Instructors	32,160	28,207	2,465	657	701	130
Lecturers	4,668	4,041	327	134	148	18
Other faculty	10,443	9,241	600	205	374	23

NOTE.—Data exclude faculty employed by system offices. Totals may differ from figures reported on other tables because of varying survey methodologies.

SOURCE: U.S. Equal Employment Opportunity Commission, Higher Education Staff Information Report File, 1985, unpublished data. (This table was prepared June 1989.)

Source: Report of the 1985-85 National Survey of Science and Mathematics Education
Research Triangle Park, NC: Research Triangle Institute

TABLE 5-13

TEACHER SEX AND RACE/ETHNICITY BY SUBJECT AND GRADE RANGE

(Percent of Teachers)*

	1977		1985-86		Change						
	Men	Women	Men	Women	Men	Women	White	Black	His-panic	Indian	Asian
Mathematics											
K-3	6	94	4	93	-2	-1	84	10	1	0	0
4-6	21	76	20	79	-1	3	84	12	2	0	0
7-9	54	46	45	51	-9	5	90	6	1	0	1
10-12	68	32	53	46	-15	14	94	3	1	0	1
Science											
K-3	2	98	3	94	1	-4	83	9	4	0	1
4-6	33	67	23	76	-10	9	86	8	4	0	1
7-9	62	38	56	41	-6	3	88	6	1	0	1
10-12	74	24	68	31	-6	7	92	5	1	1	1

* Perecentages may not sum to 100 because "Missing" and "Unknown" are not included.

SOURCE: Status of the American School Teacher 1985-86, National Education Association, Copyright 1987 by NEA, Used with permission

TABLE 5-14

CHARACTERISTICS OF PUBLIC SCHOOL TEACHERS BY SEX, SELECTED YEARS
1971 - 1986

	1971		1976		1981		1986	
	Men	Women	Men	Women	Men	Wome	Men	Women
Sex (%)	34.3	65.7	32.9	67.0	33.1	66.9	31.2	68.8
Marital Status (%)								
Single	15.2	21.6	19.7	20.3	14.5	20.4	8.8	14.7
Married	81.5	66.9	76.3	68.8	80.7	69.3	83.4	72.3
Other	3.2	11.4	4.0	10.9	4.8	10.4	7.8	13.0
Median Years Experience	8	8	9	8	13	11	17	14
% In 1st Teaching Year	9.8	8.8	6.5	5.1	1.4	3.0	2.3	3.4
% Earning Credits Past 3 Yrs	67.9	57.0	65.0	62.4	50.8	58.8	48.4	55.4
Average Credit Hrs Earned	17	13			10	9	4	4

TABLE 5-15

RACE OF TEACHERS AND PRINCIPALS IN PUBLIC SCHOOLS

	1971	1976	1981	1986
Teachers (%)				
Black	8.1	8.0	7.8	6.9
White	88.3	90.8	91.6	89.6
Other	3.6	1.2	0.7	3.4
Principals (%)				
Black	5.7	7.9	8.2	8.3
White	91.7	91.0	90.8	87.0
Other	2.7	1.1	0.9	3.8

TABLE 5-16

HIGHEST DEGREE AND TEACHING LEVEL BY SEX AND RACE, 1986

	Total	Men	Women	White	Non-White
Highest Degree (%)					
Bachelor's	48.3	38.3	52.9	48.0	51.6
Master;s	50.7	55.4	41.9	46.5	40.6
Ed Specialist (6 yrs)	4.6	5.0	4.3	4.6	4.7
Doctorate	0.7	1.0	0.6	0.5	2.3
Teaching Level (%)					
Elementary	46.5	20.4	58.4	46.4	47.3
Middle School	11.0	11.3	10.8	11.0	9.9
Junior High School	12.5	17.6	10.2	11.8	19.8
Senior High School	30.0	50.8	20.6	30.9	22.9

INTENTIONAL
BLANK

Source: Estimates of School Statistics, National Education Association, Personal Communication , Used with Permission

TABLE 5-17

INSTRUCTIONAL STAFF MEMBERS IN ELEMENTARY AND SECONDARY PUBLIC SCHOOLS BY SEX, 1970 – 1990

Year	Classroom Teachers								Total Classroom Teachers	Other Non-Supervisory In-Structional	Principals & Supervisors	Total instructional Staff	% Teachers
	Elementary Teachers				Secondary Teachers								
	Men	%Men	Women	Total	Men	%Men	Women	Total					
1970	169,635	15.3	939,667	1,109,302	482,451	53.7	416,179	898,630	2,007,932	104,023	124,104	2,236,059	89.8
1971	172,551	15.3	956,296	1,128,847	503,717	54.1	427,179	930,896	2,059,743	112,371	125,260	2,297,374	89.7
1972	177,105	15.8	945,274	1,122,379	515,633	53.6	445,689	961,322	2,083,701	120,824	128,094	2,332,619	89.3
1973	186,873	16.4	954,565	1,141,438	516,352	53.5	448,556	964,908	2,106,346	135,198	128,311	2,369,855	88.9
1974	193,588	16.8	957,093	1,150,681	527,255	53.5	457,848	985,103	2,135,784	138,074	132,359	2,406,217	88.8
1975	195,938	16.8	972,112	1,168,050	528,703	52.9	471,370	1,000,073	2,168,123	144,909	140,279	2,453,311	88.4
1976	193,649	16.6	975,560	1,169,209	538,152	52.8	481,780	1,019,932	2,189,141	139,571	141,248	2,469,960	88.6
1977	196,432	16.8	974,726	1,171,158	534,028	53.0	473,678	1,007,706	2,178,864	148,591	137,363	2,464,818	88.4
1978	196,982	16.8	975,562	1,172,544	540,002	53.1	476,892	1,016,894	2,189,438	145,476	136,983	2,471,897	88.6
1979	201,523	16.9	987,796	1,189,319	528,820	52.4	480,976	1,009,796	2,199,115	162,481	143,126	2,504,722	87.8
1980	204,020	16.9	1,002,371	1,206,391	518,380	51.6	486,594	1,004,974	2,211,365	168,367	141,501	2,521,233	87.7
1981	198,580	16.6	997,145	1,195,725	509,544	51.1	486894	996,438	2,192,163	153,686	138,894	2,484,743	88.2
1982	199,492	16.6	1,000,436	1,199,928	486,876	50.8	471,676	958,552	2,158,480	159,764	136,926	2,455,170	87.9
1983	195,110	16.5	987,235	1,182,345	483,015	50.7	468,751	951,766	2,134,111	162,784	137,338	2,434,233	87.7
1984	194,122	16.3	994,557	1,188,679	479,338	50.2	476,152	955,490	2,144,169	157,606	138,299	2,440,074	87.9
1985	197,439	16.3	1,014,254	1,211,693	473,806	49.2	489,657	963,463	2,175,156	158,698	138,731	2,472,585	88.0
1986	197,271	15.9	1,045,191	1,242,462	472,552	48.6	500,170	972,722	2,215,184	165,200	139,200	2,519,584	87.9
1987	200,271	15.7	1,075,998	1,276,269	464,155	47.6	510,329	974,484	2,250,753	170,159	142,772	2,563,684	87.8
1988	201,104	15.4	1,108,070	1,309,174	461,525	47.4	512,891	974,416	2,283,590	171,882	145,908	2,601,380	87.8
1989	205,115	15.2	1,148,194	1,353,309	453,896	46.9	514,932	968,828	2,322,137	171,805	151,385	2,645,327	87.8
1990	208,829	15.0	1,178,796	1,387,625	449,560	46.5	517,582	967,142	2,354,767	176,366	153,513	2,684,646	87.7

Note: 1989 and 1990 data are NEA estimates

SOURCE: Series of Earned Degrees Conferred, National Center for Education Statistics

TABLE 6-1

PhD DEGREES IN THE PHYSICAL SCIENCES BY SEX AND SUBFIELD, 1950 - 1989

	Total			Physical Sciences Fields															
				Physics				Chemistry				Geology				Other			
Year	No.	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W
1950	1498	49	3	358	24	5	1	953	64	39	4	113	8	3	3	74	5	2	3
1951	1681	64	4	443	26	8	2	1048	62	52	5	123	7	3	2	69	4	1	1
1952	1720	57	3	485	28	9	2	1031	60	45	4	116	7	0	0	88	5	3	3
1953	1714	62	4	478	28	6	1	999	58	51	5	133	8	3	2	104	6	2	2
1954	1686	61	4	485	29	6	1	1013	60	45	4	136	8	6	4	52	3	4	8
1955	1713	52	3	511	30	12	2	1005	59	36	4	154	9	2	1	43	3	2	5
1956	1667	68	4	470	28	8	2	986	59	52	5	135	8	1	1	76	5	7	9
1957	1674	71	4	453	27	14	3	1003	60	48	5	141	8	3	2	77	5	6	8
1958	1656	86	4	484	28	9	2	939	57	49	5	151	9	3	2	101	6	5	5
1959	1812	89	4	482	27	9	2	1009	56	49	5	198	11	5	3	123	7	6	5
1960	1838	62	3	487	26	10	2	1048	57	48	5	201	11	4	2	102	6	0	0
1961	1991	70	4	564	28	6	1	1131	57	57	5	202	10	3	1	94	5	4	4
1962	2122	87	4	667	31	12	2	1139	54	69	6	199	9	3	2	117	6	3	3
1963	2380	95	4	752	32	10	1	1254	53	78	6	266	11	5	2	109	5	2	2
1964	2456	113	5	778	32	11	1	1301	53	93	7	237	10	5	2	139	6	4	3
1965	2829	127	4	942	33	20	2	1414	50	101	7	274	10	1	0	199	7	5	3
1966	3045	131	4	973	32	21	2	1571	52	94	6	290	10	10	3	211	7	6	3
1967	3462	182	5	1183	34	30	3	1744	50	118	7	285	8	5	2	250	7	9	4
1968	3593	188	5	1280	36	26	2	1757	49	142	8	280	8	6	2	296	8	14	5
1969	3859	208	5	1296	34	32	2	1941	50	145	7	314	8	18	6	308	8	11	4
1970	4313	236	5	1439	33	37	3	2208	51	169	8	283	7	9	3	383	9	21	5
1971	4391	246	6	1482	34	43	3	2160	49	173	8	324	7	11	3	425	10	19	4
1972	4103	273	7	1344	33	43	3	1971	48	193	10	310	8	16	5	478	12	21	4
1973	4016	274	7	1338	33	51	4	1882	47	184	10	305	8	12	4	491	12	27	5
1974	3631	253	7	1116	31	47	4	1828	50	173	9	315	9	10	3	373	10	23	6
1975	3628	302	8	1080	30	52	5	1824	50	206	11	292	8	13	4	432	12	32	7
1976	3433	300	9	997	29	45	5	1623	47	197	12	313	9	23	7	500	15	35	7
1977	3344	320	10	945	28	55	6	1571	47	188	12	325	10	23	7	503	15	54	11
1978	3137	312	10	873	28	49	6	1525	49	203	13	268	9	26	10	471	15	34	7
1979	3104	350	11	918	30	66	7	1518	49	230	15	286	9	27	9	382	12	27	7
1980	3095	386	12	830	27	63	8	1551	50	260	17	313	10	26	8	401	13	37	9
1981	3141	378	12	806	26	61	7	1622	52	251	15	284	9	30	11	389	12	34	9
1982	3286	451	14	873	27	66	8	1722	52	281	16	282	9	50	18	409	12	54	13
1983	3269	458	14	866	26	61	7	1746	53	295	17	293	9	48	16	372	11	54	15
1984	3298	489	15	953	29	76	8	1744	53	319	18	315	10	49	16	286	9	45	16
1985	3390	552	16	951	28	84	9	1789	53	351	20	289	9	55	19	361	11	62	17
1986	3551	585	17	1010	28	91	9	1908	54	400	21	215	6	56	26	418	12	41	10
1987	3671	631	17	1068	30	103	9	1976	54	421	21	280	8	57	20	329	9	53	16
1988	3792	682	18	1093	29	111	10	1990	52	442	22	350	9	63	18	359	9	66	18
1989	3847	756	20	1111	29	102	9	2034	53	516	25	271	7	54	20	431	11	84	20
50–59	16,820	619	4	4,629	28	96	2	9,984	59	466	5	1,400	8	29	2	807	5	38	5
60–69	27,574	1,241	5	8,902	32	178	2	14,300	52	945	7	2,547	9	60	2	1825	7	58	3
70–79	37,100	2,866	8	11,531	31	488	4	18,110	49	1,915	11	3,021	8	170	6	4438	12	293	7
80–89	34,340	5,374	16	9,631	28	818	8	18,082	53	3,536	20	2,892	8	488	17	3,735	11	532	14
TOTAL	116,834	10,100	9	34,693	30	1,570	5	60,476	52	6,862	11	9,860	9	747	8	10,806	9	921	9

SOURCE: Series of Earned Degrees Conferred, National Center for Education Statistics, redefined by NSF

TABLE 6-2

MASTERS DEGREES IN THE PHYSICAL SCIENCES BY SUBFIELD AND SEX, 1950 – 1989

				Physical Sciences Fields															
	Total			Physics				Chemistry				Astronomy				Other			
Year	Phys Sci	Women	%W	No.	%PS	Wom	%W	No.	%PS	Wom	%W	No.	%PS	Wom	%W	No.	%PS	Wom	%W
1950				922		34	4	1576		208	13								
1951				973		39	4	1462		162	11								
1952				886		35	4	1409		167	12								
1953				721		35	5	1211		116	10								
1954				714		29	4	1098		126	11								
1955				729		28	4	1173		137	12								
1956				742		23	3	1164		129	11								
1957				825		28	3	1047		134	13								
1958				795		25	3	1125		167	15								
1959				915		30	3	1145		164	14								
1960				1073		35	3	1228		203	17								
1961				1271		50	4	1313		200	15								
1962				1425		62	4	1425		246	17								
1963				1567		76	5	1463		259	18								
1964				1848		66	4	1586		280	18								
1965				1906		80	4	1715		328	19								
1966	4233	483	11	1949	46	80	4	1839	43	355	19	59	1	9	15	386	9	39	10
1967	4441	498	11	2111	48	96	5	1831	41	347	19	69	2	11	16	430	10	44	10
1968	4500	564	13	2068	46	95	5	2014	45	418	21	80	2	12	15	318	7	39	12
1969	4787	579	12	2259	47	120	5	2070	43	381	18	107	2	7	7	351	7	71	20
1970	4824	722	15	2205	46	158	7	2146	44	480	22	92	2	9	10	381	8	75	20
1971	5159	737	14	2194	43	152	7	2284	44	492	22	108	2	14	13	573	11	79	14
1972	4899	736	15	2035	42	159	8	2259	46	505	22	167	3	12	7	438	9	60	14
1973	4804	671	14	1755	37	113	6	2230	46	467	21	92	2	12	13	727	15	79	11
1974	4408	690	16	1662	38	136	8	2138	49	474	22	89	2	12	13	519	12	68	13
1975	4327	654	15	1577	36	124	8	2006	46	416	21	113	3	15	13	631	15	99	16
1976	3904	605	15	1451	37	132	9	1796	46	383	21	89	2	8	9	568	15	82	14
1977	3686	661	18	1319	36	126	10	1775	48	448	25	81	2	14	17	511	14	73	14
1978	3734	656	18	1294	35	123	10	1882	50	445	24	95	3	12	13	463	12	76	16
1979	3687	682	18	1319	36	135	10	1765	48	447	25	116	3	15	13	487	13	85	17
1980	3440	639	19	1192	35	118	10	1733	50	447	26	79	2	9	11	436	13	65	15
1981	3424	681	20	1,294	38	115	9	1,667	49	473	28	58	2	9	16	405	12	84	21
1982	3514	749	21	1,284	37	156	12	1,758	50	497	28	80	2	11	14	392	11	85	22
1983	3329	693	21	1,370	41	162	12	1,632	49	465	28	68	2	12	18	259	8	54	21
1984	3588	850	24	1,535	43	194	13	1,677	47	538	32	67	2	10	15	307	9	108	35
1985	3642	831	23	1,523	42	190	12	1,734	48	568	33	91	2	15	16	294	8	58	20
1986	3676	917	25	1,501	41	224	15	1,764	48	599	34	83	2	11	13	328	9	83	25
1987	3587	893	25	1,543	43	243	16	1,750	49	569	33	71	2	16	23	223	6	65	29
1988	3730	892	24	1,681	45	253	15	1,702	46	554	33	88	2	17	19	259	7	68	26
1989	3733	1004	27	1,736	47	291	17	1,740	47	647	37	96	3	14	15	161	4	52	32
50–59				8,222		306	4	12,410		1,510	12								
60–69	17,961	2,124	12	17,497	97	760	4	16,484	92	3,017	18	315	2	39	12	1,485	8	193	1
70–79	43,432	6,814	16	16,811	39	1,358	8	20,281	47	4,557	22	1,042	2	123	12	5,298	12	776	2
80–88	35,661	8,149	23	14,659	41	1,946	13	17,157	48	5,357	31	781	2	124	16	3,064	9	722	2
TOTAL	97,054	17,087	18	57,189	59	4,370	8	66,332	68	14,441	22	2,138	2	286	13	9,847	10	1,691	2

SOURCE: Series of Earned Degrees Conferred, National Center for Education Statistics

TABLE 6-3

BACHELORS DEGREES IN THE PHYSICAL SCIENCES BY SUBFIELD AND SEX, 1950 – 1989

	Total			Physical Sciences Fields															
	Phys			Physics				Chemistry				Geology				Other			
Year	Sci	Women	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W
1950	17725	1737	10	3414	19	127	4	10619	60	1485	14	3043	17	109	4	649	4	16	2
1951	14296	1420	10	2788	20	117	4	8258	58	1222	15	2717	19	74	3	533	4	7	1
1952	12145	1332	11	2247	19	106	5	6819	56	1102	16	2102	17	76	4	977	8	48	5
1953	10414	1277	12	2005	19	84	4	5943	57	1073	18	1719	17	68	4	747	7	52	7
1954	9880	1273	13	1952	20	75	4	5791	59	1064	18	1632	17	79	5	505	5	55	11
1955	10516	1382	13	1996	19	76	4	5920	56	1139	19	1795	17	92	5	805	8	75	9
1956	11672	1501	13	2335	20	102	4	6178	53	1182	19	2163	19	78	4	996	9	139	14
1957	12934	1613	12	2745	21	122	4	6591	51	1294	20	2570	20	89	3	1028	8	108	11
1958	14352	1669	12	3186	22	144	5	7010	49	1305	19	2827	20	104	4	1329	9	116	9
1959	15460	1766	11	3809	25	141	4	7308	47	1411	19	2878	19	91	3	1465	9	123	8
1960	16057	2016	13	4338	27	172	4	7603	47	1598	21	2465	15	75	3	1651	10	171	10
1961	15500	2008	13	4322	28	230	5	7604	49	1508	20	1870	12	77	4	1704	11	193	11
1962	15894	2146	14	4812	30	188	4	8089	51	1715	21	1430	9	69	5	1563	10	174	11
1963	16276	2238	14	4785	29	237	5	8823	54	1768	20	1087	7	64	6	1581	10	169	11
1964	17527	2450	14	4956	28	241	5	9724	55	1914	20	1113	6	94	8	1734	10	201	12
1965	17916	2532	14	4954	28	246	5	10047	56	1936	19	1131	6	119	11	1784	10	231	13
1966	17186	2333	14	4609	27	224	5	9735	57	1801	19	1329	8	127	10	1513	9	181	12
1967	17794	2402	13	4733	27	267	6	9872	55	1771	18	1458	8	163	11	1731	10	201	12
1968	19442	2674	14	5045	26	296	6	10847	56	1965	18	1718	9	178	10	1832	9	235	13
1969	21591	2952	14	5535	26	322	6	11807	55	2156	18	2014	9	205	10	2235	10	269	12
1970	21551	2969	14	5333	25	329	6	11617	54	2116	18	2286	11	246	11	2315	11	278	12
1971	21549	3014	14	5076	24	343	7	11183	52	2095	19	2415	11	265	11	2875	13	311	11
1972	20887	3148	15	4645	22	323	7	10721	51	2120	20	2573	12	326	13	2948	14	379	13
1973	20809	3121	15	4268	21	313	7	10226	49	1967	19	2929	14	389	13	3386	16	452	13
1974	21287	3536	17	3962	19	337	9	10525	49	2112	20	3256	15	533	16	3544	17	554	16
1975	20896	3838	18	3716	18	362	10	10649	51	2385	22	3324	16	575	17	3207	15	516	16
1976	21559	4139	19	3544	16	388	11	11107	52	2497	22	3362	16	606	18	3546	16	648	18
1977	22618	4551	20	3420	15	358	10	11322	50	2602	23	3879	17	836	22	3997	18	755	19
1978	23175	4987	22	3330	14	369	11	11474	50	2881	25	4344	19	958	22	4027	17	779	19
1979	23363	5287	23	3338	14	399	12	11643	50	3113	27	4503	19	1058	23	3879	17	717	18
1980	23661	5651	24	3397	14	434	13	11446	48	3277	29	4600	19	1131	25	4218	18	809	19
1981	23952	5888	25	3441	14	432	13	11347	47	3394	30	5202	22	1303	25	3962	17	759	19
1982	24052	6186	26	3472	14	460	13	11062	46	3491	32	5538	23	1415	26	3980	17	820	21
1983	23234	6350	27	3793	16	482	13	10796	46	3630	34	6102	26	1568	26	2543	11	670	26
1984	23525	6487	28	3907	17	557	14	10704	46	3731	35	6549	28	1615	25	2365	10	584	25
1985	23597	6586	28	4097	17	559	14	10482	44	3791	36	6308	27	1558	25	2710	11	678	25
1986	21620	5927	27	4180	19	611	15	10116	47	3633	36	4974	23	1103	22	2350	11	580	25
1987	19885	5632	28	4330	22	695	16	9661	49	3591	37	3367	17	776	23	2527	13	570	23
1988	17817	5433	30	4103	23	611	15	9158	51	3652	40	2371	13	586	25	2185	12	584	27
1989	17204	5107	30	4339	25	642	15	8654	50	3342	39	2109	12	539	26	2102	12	584	28
50–59	129,394	14,970	12	26,477	20	1,094	4	70,437	54	12,277	17	23,446	18	860	4	9,034	7	739	8
60–69	175,183	23,751	14	48,089	27	2,423	5	94,151	54	18,132	19	15,615	9	1,171	7	17,328	10	2,025	12
70–79	217,694	38,590	18	40,632	19	3,521	9	110,467	51	23,888	22	32,871	15	5,792	18	33,724	15	5,389	16
80–89	218,547	59,247	27	39,059	18	5,483	14	103,426	47	35,532	34	47,120	22	11,594	25	28,942	13	6,638	23
TOTAL	740,818	136,558	18	154,257	21	12,521	8	378,481	51	89,829	24	119,052	16	19,417	16	89,028	12	14,791	17

SOURCE: Foreign Participation in U.S. Science and Engineering Education and Labor Markets, Special Report, NSF 81-316, National Science Foundation, Sept 1981; and 1980-1989 Summary Report, Doctoral Recipients from United States Universities, National Research Council, 1981-1989

TABLE 6-4

Ph.D. RECIPIENTS IN THE PHYSICAL SCIENCES* BY TYPE OF CITIZENSHIP, 1960–1989

Year	Total	U.S.		Foreign						Citizenship Not Known
				Total		Immigrants		Non-Immigrants		
		No.	%T	No.	%T	No.	%T	No.	%T	No.
1960	1,861	1,619	87.0	229	12.3	51	2.7	178	9.6	13
1961	1,993	1,696	85.1	269	13.5	48	2.4	221	11.1	28
1962	2,097	1,812	86.4	262	12.5	32	1.5	230	11.0	23
1963	2,428	2,045	84.2	333	13.7	55	2.3	278	11.4	50
1964	2,527	2,130	84.3	343	13.6	74	2.9	269	10.6	54
1965	2,865	2,418	84.4	411	14.3	85	3.0	326	11.4	36
1966	3,059	2,526	82.6	446	14.6	88	2.9	358	11.7	87
1967	3,504	2,891	82.5	540	15.4	124	3.5	416	11.9	73
1968	3,671	3,073	83.7	527	14.4	130	3.5	397	10.8	71
1969	3,919	3,251	83.0	581	14.8	170	4.3	411	10.5	87
1970	4,404	3,631	82.4	709	16.1	275	6.2	434	9.9	64
1971	4,501	3,689	82.0	737	16.4	330	7.3	407	9.0	75
1972	4,233	3,348	79.1	819	19.3	373	8.8	446	10.5	66
1973	4,021	3,098	77.0	856	21.3	348	8.7	508	12.6	67
1974	3,709	2,743	74.0	809	21.8	302	8.1	507	13.7	157
1975	3,631	2,734	75.3	813	22.4	269	7.4	544	15.0	84
1976	3,442	2,619	76.1	765	22.2	247	7.2	518	15.0	58
1977	3,410	2,623	76.9	720	21.1	213	6.2	507	14.9	67
1978	3,234	2,494	77.1	670	20.7	206	6.4	464	14.3	70
1979	3,321	2,570	77.4	685	20.6	199	6.0	486	14.6	66
1980	3,151	2,393	75.9	682	21.6	176	5.6	506	16.1	76
1981	3,208	2,419	75.4	683	21.3	160	5.0	523	16.3	106
1982	3,348	2,511	75.0	733	21.9	146	4.4	587	17.5	104
1983	3,438	2,544	74.0	794	23.1	149	4.3	645	18.8	100
1984	3,459	2,546	73.6	813	23.5	142	4.1	671	19.4	100
1985	3,531	2,549	72.2	902	25.5	166	4.7	736	20.8	80
1986	3,679	2,574	70.0	1,020	27.7	158	4.3	862	23.4	85
1987	3,837	2,498	65.1	1,093	28.5	173	4.5	920	24.0	246
1988	4,046	2,601	64.3	1,166	28.8	167	4.1	999	24.7	279
1989	3,987	2,491	62.5	1,187	29.8	177	4.4	1,010	25.3	309
Totals	101,514	78,136	77.0	20,597	20.3	5,233	5.2	15,364	15.1	2,781

* Physics, Astronomy, Chemistry, and Earth, Atmospheric and Marine Sciences

SOURCE: Early Release of Summary Statistics on Science & Engineering Doctorates, 1989; National Science Foundation.

TABLE 6-5

U.S.* CITIZENS EARNING PhDs IN MATH-BASED FIELDS BY SEX, 1978–1989

	Chemistry			Physics/Astron			Earth/Atmos/Marine			Math			Comp/Sci		
Year	Total	Wom	% W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
1978	1,293	168	13.0	868	38	4.4	540	56	10.4	666	96	14.4	90	7	7.8
1979	1,335	193	14.5	870	54	6.2	566	52	9.2	603	99	16.4	175	27	15.4
1980	1,269	218	17.2	766	53	6.9	538	60	11.2	582	86	14.8	169	20	11.8
1981	1,329	199	15.0	774	53	6.8	488	48	9.8	525	86	16.4	188	24	12.8
1982	1,369	224	16.4	741	60	8.1	557	96	17.2	499	80	16.0	155	17	11.0
1983	1,424	249	17.5	760	57	7.5	513	88	17.2	457	86	18.8	207	30	14.5
1984	1,415	266	18.8	775	59	7.6	499	97	19.4	443	86	19.4	195	27	13.8
1985	1,432	278	19.4	746	68	9.1	474	92	19.4	418	82	19.6	213	24	11.3
1986	1,413	309	21.9	732	62	8.5	446	81	18.2	402	73	18.2	249	43	17.3
1987	1,472	327	22.2	754	71	9.4	449	90	20.0	396	77	19.4	275	54	19.6
1988	1,451	328	22.6	784	74	9.4	632	120	19.0	386	70	18.1	325	46	14.2
1989	1,376	362	26.3	735	70	9.5	557	120	21.5	428	101	23.6	392	82	20.9

*Includes foreign nationals with permament visas.

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 6-6
FEDERAL WORKERS EMPLOYED IN THE PHYSICAL SCIENCES BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1990

OCCUPATIONAL TITLE	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
General Physical Science	6573	1148	17.5	599	9.1	160	26.7	282	4.3	121	1.8	183	2.8	13	0.2	5974	90.9
Health Physics	725	149	20.6	108	14.9	29	26.9	43	5.9	14	1.9	49	6.8	2	0.3	617	85.1
Physics	3901	223	5.7	298	7.6	37	12.4	56	1.4	51	1.3	184	4.7	7	0.2	3603	92.4
Geophysics	634	70	11.0	41	6.5	3	7.3	6	0.9	10	1.6	23	3.6	2	0.3	593	93.5
Hydrology	2575	375	14.6	139	5.4	30	21.6	23	0.9	60	2.3	47	1.8	9	0.3	2436	94.6
Chemistry	7884	2019	25.6	1551	19.7	546	35.2	496	6.3	190	2.4	851	10.8	14	0.2	6333	80.3
Metallurgy	270	13	4.8	40	14.8	1	2.5	3	1.1	6	2.2	31	11.5	0	0.0	230	85.2
Astronomy & Space Science	508	33	6.5	23	4.5	2	8.7	5	1.0	6	1.2	11	2.2	1	0.2	485	95.5
Meteorology	2520	178	7.1	195	7.7	32	16.4	65	2.6	51	2.0	76	3.0	3	0.1	2325	92.3
Geology	2760	509	18.4	132	4.8	37	28.0	26	0.9	43	1.6	41	1.5	22	0.8	2628	95.2
Oceanography	768	123	16.0	57	7.4	16	28.1	23	3.0	9	1.2	22	2.9	3	0.4	711	92.6
Cartography	4480	886	19.8	503	11.2	142	28.2	342	7.6	104	2.3	40	0.9	17	0.4	3977	88.8
Geodesy	319	49	15.4	26	8.2	8	30.8	19	6.0	3	0.9	4	1.3	0	0.0	293	91.8
Land Surveying	540	24	4.4	36	6.7	1	2.8	2	0.4	19	3.5	1	0.2	14	2.6	504	93.3
Forest Products Technology	73	7	9.6	4	5.5	0	0.0	0	0.0	0	0.0	4	5.5	0	0.0	69	94.5
Food Techonolgy	476	113	23.7	74	15.5	21	28.4	25	5.3	16	3.4	31	6.5	2	0.4	402	84.5
Textile Technology	100	53	53.0	14	14.0	0	0.0	6	6.0	0	0.0	8	8.0	0	0.0	86	86.0
Photographic Technology	42	1	2.4	4	9.5	0	0.0	1	2.4	3	7.1	0	0.0	0	0.0	38	90.5
TOTALS	35148	5973	17.0	3844	10.9	1065	27.7	1423	4.0	706	2.0	1606	4.6	109	0.3	31304	89.1

SOURCE: Doctorate Recipients from United States Universities, Summary Reports 1960 - 1989

TABLE 6-7

CHEMISTRY PhDs BY SUBFIELD AND SEX, 1960 - 1989

Year of PhD	Total Chemistry	Agri & Food+	Analyt-ical	In-organic	Nuclear	Organic	Pharma-ceutical	Physical	Polymer	Theo-retical	Chem. General	Chem. Other
Total Men and Women												
1960-69	14586	428	1043	1575	272	5986	470	3980		294	305	233
1970-79	18201	211	1609	2401	244	6131	552	4101	310	528	1405	709
1980-85	12026		1666	1553	91	3511	413	2129	466	293		
1986	1903		257	260	18	510	58	293	72	41	290	104
1987	1974		314	240	13	510	64	302	96	46	299	90
1988	2018		301	250	7	529	73	317	81	50	316	94
1989	1971		289	256	6	505	65	309	78	46	320	97
Women												
1960-69	933	24	69	128	13	333	18	270		24	31	23
1970-79	1893	35	127	298	22	504	63	483	18	67	183	93
1980-85	2105		282	291	12	514	92	420	67	45		
1986	396		46	62	2	96	17	71	12	6	52	32
1987	406		72	59		88	16	59	13	17	54	28
1988	429		60	66		89	19	71	12	9	75	28
1989	497		63	73		102	22	87	15	9	93	33
% Women												
1960-69	6.4	5.6	6.6	8.1	4.8	5.6	3.8	6.8		8.2	10.2	9.9
1970-79	10.4	16.6	7.9	12.4	9.0	8.2	11.4	11.8	5.8	12.7	13.0	13.1
1980-85	17.5		16.9	18.7	13.2	14.6	22.3	19.7	14.4	15.4		
1986	20.8		17.9	23.8	11.1	18.8	29.3	24.2	16.7	14.6	17.9	30.8
1987	20.6		22.9	24.6	0.0	17.3	25.0	19.5	13.5	37.0	18.1	31.1
1988	21.3		19.9	26.4	0.0	16.8	26.0	22.4	14.8	18.0	23.7	29.8
1989	25.2		21.8	28.5	0.0	20.2	33.8	28.2	19.2	19.6	29.1	34.0

+ Deleted in 1980

SOURCE: Earned Degrees Conferred Series, 1973 thru 1989, U.S. Office of Eduation (NCES)

TABLE 6-8

BIOCHEMISTRY DEGREES AWARDED BY SEX AND LEVEL OF DEGREE 1973 - 1989

	BACHELORS			MASTERS			PhDs		
		Women			Women			Women	
YEAR	Total	No.	%	Total	No.	%	Total	No.	%
1973	872	195	22.4	270	74	27.4	636	129	20.3
1974	1,101	254	23.1	249	65	26.1	606	147	24.3
1975	1,355	359	26.5	270	77	28.5	620	147	23.7
1976	1,622	480	29.6	254	72	28.3	616	141	22.9
1977	1,693	495	29.2	314	104	33.1	608	135	22.2
1978	1,752	517	29.5	319	105	32.9	607	146	24.1
1979	1,799	591	32.9	301	131	43.5	600	156	26.0
1980	1,686	596	35.3	268	98	36.6	672	188	28.0
1981	1,837	656	35.7	258	90	34.9	644	189	29.3
1982	1,865	668	35.8	273	104	38.1	650	166	25.5
1983*	1,876	716	38.2	270	105	38.9	656	194	29.6
1984	2,052	843	41.1	254	109	42.9	606	191	31.5
1985	2,111	850	40.3	257	115	44.7	579	184	31.8
1986	2,109	867	41.1	279	114	40.9	571	194	34.0
1987	2,111	917	43.4	265	114	43.0	571	198	34.7
1988	2,044	911	44.6	247	105	42.5	613	203	33.1
1989	1,976	875	44.3	223	101	45.3	670	266	39.7
Total	29,861	10,790	36.1	4,571	1,683	36.8	10,525	2,974	28.3

* Includes Biophysics beginning in 1983

SOURCE: Early Release of Summary Statistics on Science & Engineering Doctorates, 1989; National Science Foundation

TABLE 6-9

CHEMISTRY PhDs BY CITIZENSHIP AND VISA TYPE,SEX AND RACIAL/ETHNIC GROUP
1978 – 1989

		Foreign Citizens				U.S. Citizens											
				Visas						Minorities				Total	%		Un-
Year	Total	Total	%For	Temp	Perm	Total	Men	Women	% Wom	Black	Hisp	Asian	Ind	Min	Min	White	known
1967	1,773	268	15.1	301	2	1,470											32
1978	1,782	230	12.9			1,515											36
1969	1,967	279	14.2	282	29	1,656											30
1970	2,223	338	15.2			1,863											20
1971	2,211	347	15.7	323	46	1,842											22
1972	2,011	370	18.4			1,605											36
1973	1,855	365	19.7	281	116	1,458											32
1874	1,792	355	19.8			1,407											30
1975	1,776	345	19.4	322	60	1,394											37
1976	1,623	339	20.9			1,259											24
1977	1,571	305	19.4	199	104	1,238											28
1978	1,509	335	22.2	216	119	1,174	1,025	149	12.7	27	13	33	3	76	6.5	1,013	85
1979	1,543	303	19.6	208	95	1,240	1,070	170	13.7	28	13	32	1	74	6.0	1,078	88
1980	1,506	337	22.4	237	100	1,169	984	185	15.8	10	11	40	3	64	5.5	1,023	82
1981	1,568	333	21.2	239	94	1,235	1,056	179	14.5	13	20	26	1	60	4.9	1,102	73
1982	1,633	348	21.3	264	84	1,285	1,076	209	16.3	10	15	35		60	4.7	1,191	34
1983	1,707	352	20.6	283	69	1,355	1,121	234	17.3	11	19	39	3	72	5.3	1,248	35
1984	1,713	381	22.2	298	83	1,332	1,083	249	18.7	18	26	50	3	97	7.3	1,189	46
1985	1,762	417	23.7	330	87	1,345	1,084	261	19.4	19	14	57	2	92	6.8	1,219	34
1986	1,806	486	26.9	393	93	1,320	1,044	276	20.9	13	24	56	5	98	7.4	1,182	40
1987	1,871	490	26.2	399	91	1,381	1,085	296	21.4	11	40	49	6	106	7.7	1,243	32
1988	1,893	517	27.3	442	75	1,376	1,071	305	22.2	17	43	47	5	112	8.1	1,235	29
1989	1,837	545	29.7	461	84	1,292	952	340	26.3	20	40	42	5	107	8.3	1,161	24

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 6-10

CHEMISTRY DOCTORATES BY RACE/ETHNICITY, 1975 – 1989
(U.S. Citizens and U.S. Permanent Visa-Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	1,519	1,365	154	10.1	1,182	125	86.0	21	2	9	1	0	0	2.2	79	18	6.4
1976	1,405	1,244	161	11.5	1,063	126	84.6	16	4	9	2	0	0	2.2	102	27	9.2
1977	1,343	1,198	145	10.8	1,021	115	84.6	19	3	16	4	2	0	3.3	80	17	7.2
1978	1,293	1,125	168	13.0	909	131	80.4	24	5	12	2	3	0	3.6	100	21	9.4
1979	1,335	1,142	193	14.5	949	144	81.9	25	4	11	7	1	0	3.6	78	27	7.9
1980	1,269	1,051	218	17.2	874	165	81.9	10	2	9	6	2	1	2.4	84	34	9.3
1981	1,329	1,130	199	15.0	954	168	84.4	16	2	18	4	1	0	3.1	74	19	7.0
1982	1,369	1,145	224	16.4	1,026	188	88.7	11	4	12	4	0	0	2.3	64	24	6.4
1983	1,424	1,175	249	17.5	1,055	207	88.6	14	2	7	14	3	0	2.8	60	23	5.8
1984	1,415	1,149	266	18.8	988	223	85.6	21	2	24	9	3	0	4.2	70	27	6.9
1985	1,432	1,154	278	19.4	1,013	230	86.8	17	6	12	5	2	0	2.9	79	33	7.8
1986	1,413	1,104	309	21.9	952	256	85.5	14	3	19	6	3	2	3.3	74	35	7.7
1987	1,467	1,141	326	22.2	993	270	86.1	11	2	29	15	4	2	4.3	77	31	7.4
1988	1,451	1,123	328	22.6	981	276	86.6	14	7	35	13	5	0	5.1	57	28	5.9
1989	1,378	1,014	364	26.4	868	314	85.8	19	7	26	17	5	0	5.4	73	22	6.9
Totals	20,842	17,260	3,582	17.2	14,828	2,938	85.2	252	55	248	109	34	5	3.4	1,151	386	7.4

* The data for 'All races' include recipients whose race/ethnicity is unknown.

SOURCE: American Chemical Society Committee on Professional Training

TABLE 6-11

CHEMISTRY GRADUATES BY DEGREE LEVEL AND SEX, 1971 – 1989

	B.S. (ACS Certified)			B.S. (Not Certified)			M.S			Ph.D.		
YEAR	Total	Women	% W	Total	Women	% W	Total	Women	% W	Total	Women	% W
1971	3,708	592	16.0	4,248	744	17.5	1,941	443	22.8	2,097	117	5.6
1972	3,424	587	17.1	4,484	819	18.3	2,019	470	23.3	1,929	207	10.7
1973	3,835	687	17.9	4,225	755	17.9	2,005	439	21.9	1,880	182	9.7
1974	3,844	758	19.7	4,969	948	19.1	1,867	430	23.0	1,732	181	10.5
1975	3,897	794	20.4	5,187	1,110	21.4	1,814	401	22.1	1,781	208	11.7
1976	4,103	855	20.8	5,813	1,332	22.9	1,676	373	22.3	1,622	202	12.5
1977	4,219	949	22.5	5,988	1,355	22.6	1,688	403	23.9	1,563	189	12.1
1978	4,260	995	23.4	6,090	1,540	25.3	1,798	434	24.1	1,532	214	14.0
1979	4,424	1,107	25.0	6,027	1,691	28.1	1,716	448	26.1	1,532	243	15.9
1980	4,170	1,152	27.6	6,000	1,658	27.6	1,698	419	24.7	1,561	274	17.6
1981	4,337	1,223	28.2	6,116	1,805	29.5	1,609	451	28.0	1,613	255	15.8
1982	4,179	1,284	30.7	5,687	1,721	30.3	1,645	491	29.8	1,683	272	16.2
1983	4,233	1,391	32.9	5,810	1,921	33.1	1,569	444	28.3	1,759	300	17.1
1984	4,201	1,420	33.8	5,618	1,952	34.7	1,637	544	33.2	1,777	331	18.6
1985	4,021	1,417	35.2	5,658	1,999	35.3	1,621	524	32.3	1,806	359	19.9
1986	3,892	1,380	35.5	5,403	1,967	36.4	1,620	564	34.8	1,885	389	20.6
1987	3,663	1,303	35.6	5,185	1,954	37.7	1,636	552	33.7	1,936	414	21.4
1988	3,453	1,337	38.7	4,919	1,958	39.8	1,584	530	33.5	1,955	451	23.1
1989	3,382	1,262	37.3	4,740	1,835	38.7	1,703	627	36.8	1,967	509	25.9
TOTAL	75,245	20,493	27.2	102,167	29,064	28.4	32,846	8,987	27.4	33,610	5,297	15.8

FIELD: Chemistry

SOURCE: 1976 and 1978 Report of Chemists' Salaries and Equipment Status and Salaries 1981, '83, '87, '89 and '90, Office of Manpower Studies, American Chemical Society

TABLE 6-12

ACS CHEMISTS BY SEX AND MINORITY, SELECTED YEARS 1976 - 1990

Year	Black	His-panic	Am. Ind.	Asian	All Min.	White, on-Min
Men						
1976	1.0	0.6	0.2	3.0	4.8	95.2
1981	0.9	0.6	0.1	5.2	7.6	92.4
1983	1.1	0.8	0.2	5.9	8.0	91.0
1985	0.9	0.8	0.2	5.6	8.4	90.7
1987	1.1	1.0	0.5	5.6	8.7	91.3
1989	1.0	1.7	0.5	5.8	9.0	91.0
1990	0.9	0.8	0.3	6.6		90.3
Women						
1976	2.8	0.9	0.1	6.9	10.7	89.3
1981	3.6	0.9	0.2	6.7	12.2	87.8
1983	2.4	1.2	0.1	6.7	10.4	88.8
1985	1.8	1.2	0.2	6.4	10.2	89.2
1987	1.5	1.0	0.3	6.1	9.2	90.8
1989	1.6	1.6	0.6	6.3	10.1	89.9
1990	1.6	1.1	0.5	7.0		88.3
Both						
1983	1.3	0.9	0.2	6.0	8.4	90.2
1985	1.1	0.9	0.2	5.7	8.7	90.3
1987	1.2	1.0	0.4	5.7	8.8	91.2
1989	1.1	1.7	0.5	5.9	9.2	90.8
1990	1.1	0.9	0.4	6.7		89.9

TABLE 6-13

ACS MEMBER CHEMISTS IN INDUSTRY BY AGE, HIGHEST DEGREE AND SEX, 1989

Age Level	BACHELORS %Men	BACHELORS %Wom	MASTERS %Men	MASTERS %Wom	DOCTORATES %Men	DOCTORATES %Wom
20-29	18.2	41.8	6.6	19.8	3.9	9.0
30-39	32.6	34.4	31.3	35.9	28.5	46.6
40-49	17.0	13.6	25.6	24.0	32.6	24.1
50-59	18.2	6.1	23.4	13.1	24.2	13.0
60-69	13.3	3.5	12.4	6.5	9.9	4.8
> 69	0.8		0.7		0.9	

Columns may not add to 100 due to rounding

CHART 6-1

PERCENT WOMEN PhD CHEMISTRY DEGREES AND TENURE TRACK FACULTY

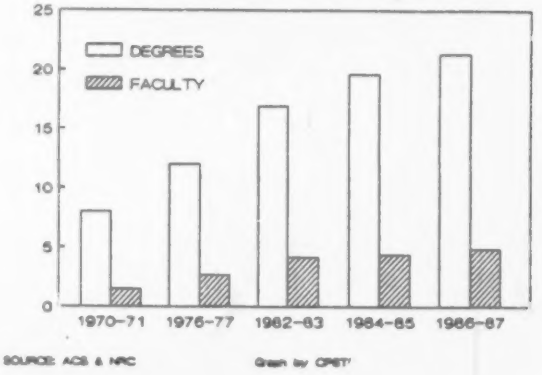


TABLE 6-14

ACS MEMBER CHEMISTS BY DEGREE AND MINORITY, SELECTED YEARS, 1967 - 1990

Year	Black BS	Black MS	Black PhD	Black All	Hispanic BS	Hispanic MS	Hispanic PhD	Hispanic All	Am. Indian BS	Am. Indian MS	Am. Indian PhD	Am. Indian All	Asian BS	Asian MS	Asian PhD	Asian All	All Minorities* BS	All Minorities* MS	All Minorities* PhD	All Minorities* All	White Non-Hisp BS	White Non-Hisp MS	White Non-Hisp PhD	White Non-Hisp All
1976	1.2	1.8	1.0	1.2	0.7	0.8	0.5	0.6	0.2	0.0	0.2	0.2	2.1	2.8	4.2	3.3	4.2	5.4	5.9	5.3	95.8	94.6	94.1	94.7
1983	1.8	1.6	1.0	1.3	1.0	1.1	0.8	0.9	0.4	0.0	0.1	0.2	3.0	4.5	8.1	6.0	6.2	7.2	10.0	8.4	92.6	91.6	88.8	90.2
1987	1.7	1.0	0.9	1.1	1.2	0.9	0.9	1.0	0.5	0.4	0.4	0.4	2.3	5.0	7.3	5.7	6.2	8.0	10.1	8.8	93.8	92.0	89.9	91.2
1989	1.7	1.2	0.9	1.1	2.1	1.7	1.5	1.7	0.7	0.4	0.4	0.5	2.8	5.5	7.3	5.9	8.1	9.4	10.6	9.8	91.1	89.9	88.0	89.2
1990	1.6	1.3	0.9	1.1	1.1	0.9	0.8	0.9	0.7	0.3	0.3	0.4	3.1	5.3	8.7	6.7					92.3	91.0	88.6	89.9

*Includes Other Race in 1987 and 1989

SOURCE: Doctorate Recipients from United States Universities, Summary Report 1989, National Research Council

TABLE 6-15
PhD AWARDS IN PHYSICS AND ASTRONOMY BY SUBFIELD AND SEX, 1960 – 1989

Subfields	Total PhDs							Number of Women							% Women						
	'60–69	70–79	80–85	1986	1987	1988	1989	'60–69	'70–79	'80–85	1986	1987	1988	989	'60–69	'70–79	'80–85	1986	1987	1988	1989
PHYSICS & ASTRONOMY Total	9836	13817	7291	1187	1236	1302	1160	213	574	581	109	120	130	118	2.2	4.2	8.0	9.2	9.7	10.0	10.2
Astronomy(1)	36	614	332	52	46	66	41	2	53	47	4	7	13	8	5.6	8.6	14.2	7.7	15.2	19.7	19.5
Astrophysics(1)	67	657	413	57	54	64	56	5	30	42	5	6	3	8	7.5	4.6	10.2	8.8	11.1	4.7	14.3
Astronomy/Astrophysics(1)	435							28							6.4						
Acoustics	94	150	102	15	17	16	15	0	3	11	2		2		0.0	2.0	10.8	13.3		12.5	
Atomic & Molecular	1029	1191	495	70	79	77	67	21	36	36	6	4	8	8	2.0	3.0	7.3	8.6	5.1	10.4	11.9
Electron(2)			11	2	6	2	4			2							18.2				
Electromagnetism(3)	232	115						3	2						1.3	1.7					
Elementary Particles	1561	1749	937	147	159	174	124	35	72	44	11	15	16	10	2.2	4.1	4.7	7.5	9.4	9.2	8.1
Fluids	277	201	100	6	21	16	13	8	7	10	2			1	2.9	3.5	10.0	33.3			7.7
Mechanics(4)	63	37							2							5.4					
Nuclear Structure(5)	1586	1499	523	89	74	88	73	25	49	43	8	4	6	8	1.6	3.3	8.2	9.0	5.4	6.8	11.0
Optics	103	336	342	58	50	65	71	2	6	28	9	5	6	7	1.9	1.8	8.2	15.5	10.0	9.2	9.9
Plasma	63	724	448	61	70	65	57		18	18	3	5	4	4		2.5	4.0	4.9	7.1	6.2	7.0
Polymer(2)			40	11	15	20	6			6	3	3		1			15.0	27.3	20.0	0.0	16.7
Solid State	2530	3334	1665	280	287	253	274	39	143	130	29	24	35	23	1.5	4.3	7.8	10.4	8.4	13.8	8.4
Theoretical Physics(6)	260							3							1.2						
Thermal(7)	123	122	12					4	5						3.3	4.1					
Physics, General	598	1730	1168	222	240	273	251	18	88	73	18	31	25	20	3.0	5.1	6.3	8.1	12.9	9.2	8.0
Physics, Other	779	1358	703	117	118	123	108	20	60	91	9	16	12	20	2.6	4.4	12.9	7.7	13.6	9.8	18.5

(1) "Astronomy/astrophysics" were combined until 1969. (2) Subfield introduced in 1983. (3) Originally "Electricity and magnetism", then "Electromagnetism" in 1966. Subfield deleted in 1980. (4) Deleted in 1977. (5) "Nuclear structure" until 1963. (6)Deleted in 1962. (7) "Heat (Thermal)" in 1960. "Thermal phenomena"in 1963. "Thermal physics in 1967, deleted in 1982.

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 6-16
PHYSICS AND ASTRONOMY DOCTORATES BY RACE/ETHNICITY, 1975 – 1989

(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

Year	All Races*				White		%	Black		Hispanic		Am. Indian		U–Rep	Asian		
	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	1,034	979	55	5.3	827	46	84.4	10	1	9	0	0	0	1.9	68	6	7.2
1976	987	951	36	3.6	816	27	85.4	3	2	6	0	0	0	1.1	48	4	5.3
1977	919	868	51	5.5	707	40	81.3	10	0	13	0	4	0	2.9	53	10	6.9
1978	868	830	38	4.4	685	25	81.8	8	0	6	0	1	0	1.7	49	9	6.7
1979	870	816	54	6.2	650	44	79.8	8	0	13	2	0	0	2.6	57	6	7.2
1980	766	713	53	6.9	579	43	81.2	4	0	11	1	0	0	2.1	41	5	6.0
1981	774	721	53	6.8	594	41	82.0	5	1	8	0	0	0	1.8	51	5	7.2
1982	741	681	60	8.1	600	45	87.0	10	1	6	3	3	0	3.1	33	10	5.8
1983	760	703	57	7.5	604	51	86.2	9	0	5	0	3	0	2.2	48	5	7.0
1984	775	716	59	7.6	628	49	87.4	11	0	13	1	1	0	3.4	40	7	6.1
1985	746	678	68	9.1	603	54	88.1	3	1	11	2	1	0	2.4	30	8	5.1
1986	732	670	62	8.5	598	50	88.5	7	1	12	3	0	0	3.1	31	6	5.1
1987	754	683	71	9.4	613	62	89.5	6	1	10	2	1	0	2.7	30	5	4.6
1988	784	710	74	9.4	615	54	85.3	11	1	12	3	0	1	3.6	38	14	6.6
1989	735	665	70	9.5	571	56	85.3	5	0	15	1	5	0	3.5	46	13	8.0
Totals	12,245	11,384	861	7.0	9,690	687	84.7	110	9	150	18	19	1	2.5	663	113	6.3

* The data for All Races include recipients whose race/ethnicity is unknown.

FIELD: Physics and Astronomy

SOURCE: Doctorate Records File and Summary Reports: Doctorate Recipients from United States Universities, 1974 - 1989, National Research Council

TABLE 6-17

PHYSICS AND ASTRONOMY PhD AWARDS BY CITIZENSHIP AND VISA TYPE, 1967 – 1989

		U.S.		FOREIGN						Citizen-ship
				Total		Immigrant		Non-Immigrant		
YEAR	TOTAL	No.	%	No.	%	No.	%	No.	%	Unknown
1967	1,295	1,036	80.0	224	17.3	67	5.2	254	19.6	34
1978	1,422	1,165	81.9	215	15.1					41
1969	1,452	1,194	82.2	221	15.2	58	4.0	278	19.1	35
1970	1,657	1,337	80.7	285	17.2				0.0	33
1971	1,740	1,375	79.0	318	18.3	72	4.1	375	21.6	45
1972	1,635	1,279	78.2	330	20.2					26
1973	1,590	1,185	74.5	372	23.4	69	4.3	335	21.1	30
1874	1,334	971	72.8	336	25.2					27
1975	1,293	921	71.2	349	27.0	67	5.2	312	24.1	23
1976	1,235	906	73.4	303	24.5					25
1977	1,149	830	72.2	294	25.6	86	7.5	208	18.1	25
1978	1,066	803	75.3	245	23.0	64	6.0	181	17.0	18
1979	1,108	800	72.2	277	25.0	70	6.3	207	18.7	31
1980	983	715	72.8	240	24.4	51	5.4	189	19.2	28
1981	1,015	721	70.4	256	24.9	53	4.6	203	20.0	47
1982	1,013	706	69.6	277	27.3	35	3.4	242	23.9	31
1983	1,043	709	67.9	307	29.5	51	4.8	256	24.5	27
1984	1,080	379	68.4	302	27.9	36	36.7	266	24.6	39
1985	1,080	698	64.6	338	31.3	48	4.3	290	26.9	45
1986	1,187	694	58.3	405	34.1	40	3.2	365	30.7	90
1987	1,237	699	56.5	455	36.6	56	4.4	399	32.3	85
1988	1,207	722	56.5	485	36.6	62	5.1	423	35.0	98
1989	1,162	673	57.9	489	42.1	62	5.3	427	36.7	0
TOTAL	28,983	20,518	70.8	7,323	25.3	1,047	3.6	5,210	18.0	884

SOURCE: ***Enrollments and Degrees,*** American Institute of Physics, Pub. No. R-151.27

TABLE 6-18
PHYSICS DEGREES AWARDED BY SEX, CITIZENSHIP AND MINORITY GROUP* STATUS
1989

Type of degrees	Sex	Total no. of degrees	Black		Native American Indian	Hispanic		Oriental		Asian Indian		Arab	
			U.S.	Foreign		U.S.	Foreign	U.S.	Foreign	U.S.	Foreign	U.S.	Foreign
Bachelor's	Men	4390	133	12	3	46	14	143	52	29	30	20	29
	Women	836	20	–	2	9	3	27	17	5	5	2	2
	Total	5226	153	12	5	55	17	170	69	34	35	22	31
Master's enroute	Men	939	18	7	–	6	13	27	212	6	57	–	17
	Women	161	1	–	–	1	5	4	51	1	16	–	2
	Total	1100	19	7	–	7	18	31	263	7	73	–	19
Terminal master's	Men	571	16	5	1	2	9	8	53	–	20	2	14
	Women	110	1	1	–	–	3	3	13	–	17	–	3
	Total	681	17	6	1	2	12	11	66	–	37	2	17
Doctor's	Men	1021	8	6	1	7	21	30	218	4	55	5	28
	Women	91	1	1	1	2	3	5	19	2	8	–	1
	Total	1112	9	7	2	9	24	35	237	6	63	5	29

**Minorities in AIP surveys are defined as groups with a low representation in the physics community, but one whose participation has aroused considerable interest.*

Source: Science and Enginering Degrees: 1966-88 a Source Book, National Science Foundation, NSF 90-312

TABLE 6-19
ASTRONOMY DEGREES AWARDED BY SEX AND LEVEL OF DEGREE
1966 – 1988

Year	Bachelors			Masters			Doctorates*		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1966	86	10	11.6	59	9	15.3	66	3	4.5
1967	100	11	11.0	69	11	15.9	64	5	7.8
1968	115	22	19.1	80	12	15.0	98	9	9.2
1969	118	11	9.3	107	7	6.5	112	7	6.3
1970	139	19	13.7	92	9	9.8	111	8	7.2
1971	136	9	6.6	108	14	13.0	113	8	7.1
1972	159	24	15.1	167	12	7.2	129	8	6.2
1973	143	26	18.2	92	12	13.0	131	6	4.6
1974	179	35	19.6	89	12	13.5	133	6	4.5
1975	143	28	19.6	113	15	13.3	131	12	9.2
1976	166	17	10.2	89	8	9.0	150	11	7.3
1977	152	21	13.8	81	14	17.3	120	9	7.5
1978	128	26	20.3	95	12	12.6	138	7	5.1
1979	120	20	16.7	116	15	12.9	115	8	7.0
1980	122	24	19.7	79	9	11.4	121	13	10.7
1981	129	26	20.2	58	9	15.5	109	11	10.1
1982	113	21	18.6	80	11	13.8	102	16	15.7
1983	96	24	25.0	68	12	17.6	115	15	13.0
1984	95	20	21.1	67	10	14.9	98	12	12.2
1985	119	30	25.2	91	15	16.5	100	11	11.0
1986	149	23	15.4	83	11	13.3	109	9	8.3
1987	130	23	17.7	71	16	22.5	100	13	13.0
1988	126	19	15.1	88	17	19.3	130	16	12.3
66-75	1318	196	14.8	976	113	11.6	1088	72	6.6
76-85	1240	229	18.5	824	115	14.0	1168	113	9.7
86-88	405	65	16.0	242	44	18.2	339	38	11.2
TOTAL	2963	489	16.5	2042	272	13.3	2595	223	8.6

* Doctorate data are from the National Research Council,Survey of Earned Doctorates. Bachelors and Masters data are from the National Center for Education Statistics' Earnered Degrees and Completions Surveys

FIELD: Physics

SOURCE: Graduate Student Survey, American Institute of Physics, API Pubs. R-207.14, .16, .18, .20 and .21; 1982, '84, '86, '88, '89 and '90.

TABLE 6-20

GRADUATE PHYSICS STUDENTS BY MINORITY GROUP AND SEX, SELECTED YEARS 1980–81 THRU 1987–89

YEAR	Black			Amer	Hispanic					Asian	Oriental			Arab	Total	Total	Total
	U.S.	Foreign	Total	Ind	Puerto Rican	Mex. Amer.	Other U.S.	Other Foreign	Other Total	Indian	U.S.	Foreign	Total		Minority	Response	Population
TOTAL MEN AND WOMEN																	
1980-81	70	24	94	12	21	15	18	121	175	360	88	612	700	171	1,512	6,498	9,934
1982-83	46	32	78	9	17	11	23	144	195	351	87	847	934	210	1,777	6,442	10,429
1984-85	42	35	77	12	18	16	44	115	193	374	101	1,149	1,250	180	2,086	6,525	11,337
1986-87	52	32	84	23	19	16	31	91	157	387	129	1,577	1,706	174	2,531	7,105	12,011
1987-88	59	28	87	14	18	16	42	91	167	353	133	1,748	1,881	163	2,665	7,327	13,143
1988-89	68	35	103	15	16	17	52	100	185	372	146	1,721	1,867	135	2,677	7,391	13,361
% MINORITY																	
1980-81	1.1	0.4	1.4	0.2	0.3	0.2	0.3	1.9	2.7	5.5	1.4	9.4	10.8	2.6	23.3		
1982-83	0.7	0.5	1.2	0.1	0.3	0.2	0.4	2.2	3.0	5.4	1.4	13.1	14.5	3.3	27.6		
1984-85	0.6	0.5	1.2	0.2	0.3	0.2	0.7	1.8	3.0	5.7	1.5	17.6	19.2	2.8	32.0		
1986-87	0.7	0.5	1.2	0.3	0.3	0.2	0.4	1.3	2.2	5.4	1.8	22.2	24.0	2.4	35.6		
1987-88	0.8	0.4	1.2	0.2	0.2	0.2	0.6	1.2	2.3	4.8	1.8	23.9	25.7	2.2	36.4		
1988-89	0.9	0.5	1.4	0.2	0.2	0.2	0.7	1.4	2.5	5.0	2.0	23.3	25.3	1.8	36.2		
WOMEN																	
1980-81	10	0	10	2	3	0	2	10	15	66	15	79	94	12	199	560	
1982-83	7	2	9	1	2	2	1	10	15	68	16	123	139	27	259	709	
1984-85	8	3	11	3	6	2	6	15	29	70	16	159	175	16	304	783	
1986-87	11	1	12	2	3	1	0	10	14	96	20	248	268	16	408	924	
1987-88	14	6	20	4	1	1	5	12	19	88	20	283	303	15	449	1,025	
1988-89	13	5	18	0	2	2	6	9	19	82	23	289	312	13	444	1,035	
% WOMEN																	
1980-81	14.3	0.0	10.6	16.7	14.3	0.0	11.1	8.3	8.6	18.3	17.0	12.9	13.4	7.0	13.2		
1982-83	15.2	6.3	11.5	11.1	11.8	18.2	4.3	6.9	7.7	19.4	18.4	14.5	14.9	12.9	14.6		
1984-85	19.0	8.6	14.3	25.0	33.3	12.5	13.6	13.0	15.0	18.7	15.8	13.8	14.0	8.9	14.6		
1986-87	21.2	3.1	14.3	8.7	15.8	6.3	0.0	11.0	8.9	24.8	15.5	15.7	15.7	9.2	16.1		
1987-88	23.7	21.4	23.0	28.6	5.6	6.3	11.9	13.2	11.4	24.9	15.0	16.2	16.1	9.2	16.8		
1988-89	19.1	14.3	17.5	0.0	12.5	11.8	11.5	9.0	10.3	22.0	15.8	16.8	16.7	9.6	16.6		

FIELD: Physics and Astronomy

SOURCE: Graduate Student Survey, American Institute of Physics, AIP Pubs. R-207.17,.18,.19,.20,.21; 1985, '86, '87, '88 and '89.

TABLE 6-21

GRADUATE PHYSICS STUDENTS AND DEGREE RECIPIENTS 1983-84 THRU 1988-89

YEAR	Total Population	Number Respondents	Percent Women	Men	Percent U.S. Citizens	Foreign Citizens
ALL GRADUATE STUDENTS						
1983-84	10,922	6,401	12%	88%	65%	35%
1984-85	11,337	6,525	12	88	64	36
1985-86	12,011	6,790	13	87	62	38
1986-87	12,616	7,105	13	87	61	39
1987-88	13,143	7,327	14	86	60	40
1988-89	13,361	7,391	14	86	59	41
FIRST-YEAR GRADUATE STUDENTS						
1983-84	2,855	1,337	12%	88%	62%	38%
1984-85	2,863	1,303	13	87	61	39
1985-86	2,981	1,347	15	85	58	42
1986-87	3,162	1,364	15	85	57	43
1987-88	3,274	1,159	15	85	59	41
1988-89	3,132	1,329	15	85	58	42
TERMINAL MASTERS DEGREE RECIPIENTS						
1983-84	657	257	14%	86%	80%	20%
1984-85	629	269	13	87	80	20
1985-86	704	277	16	84	81	19
1986-87	623	295	16	84	82	18
1987-88	698	246	16	84	85	15
1988-89	681	275	16	84	82	18
DOCTORATE DEGREE RECIPIENTS						
1983-84	971	542	8%	92%	75%	25%
1984-85	972	605	8	92	69	31
1985-86	1051	623	9	91	66	34
1986-87	1105	710	9	91	62	38
1987-88	1150	682	10	90	62	38
1988-89	1112	708	8	92	61	39

TABLE 6-22

GRADUATE ASTRONOMY STUDENTS & DEGREE RECIPIENTS 1983-84 THRU 1988-89

YEAR	Total Population	Number Respondents	Percent Women	Men	Percent U.S. Citizens	Foreign Citizens
ALL GRADUATE STUDENTS						
1983-84	688	461	16%	84%	78%	22%
1984-85	716	406	19	81	78	22
1985-86	711	486	19	81	76	25
1986-87	755	512	20	80	75	25
1987-88	731	527	18	82	77	23
1988-89	780	547	19	81	77	23
FIRST-YEAR GRADUATE STUDENTS						
1983-84	154	90	22%	78%	72%	28%
1984-85	151	80	25	75	72	28
1985-86	170	107	22	78	69	31
1986-87	173	88	16	84	76	24
1987-88	171	101	18	82	74	26
1988-89	169	107	20	80	74	26
TERMINAL MASTERS DEGREE RECIPIENTS						
1983-84						
1984-85						
1985-86						
1986-87	23	15	15%	85%	80%	20%
1987-88	24	10	29	71	90	10
1988-89	116	6	29	71	90	10
DOCTORATE DEGREE RECIPIENTS						
1983-84	74	54	16%	84%	83%	17%
1984-85	66	55	13	87	89	11
1985-86	86	48	7	93	83	17
1986-87	72	49	12	88	88	12
1987-88	94	67	14	86	69	31
1988-89	94	56	17	83	68	32

FIELD: Earth, Atmospheric and Marine Sciences

SOURCE: Doctorate Records File and Summary Reports: Doctorate Recipients from United States Universities, 1974 - 1989, National Research Council and and Natonal Science Foundation 1989 prerelease data.

TABLE 6-23

PhD AWARDS IN EARTH, ATMOSPHERIC & MARINE SCIENCES BY SUBFIELD AND SEX, 1960 - 1989

Subfields	Year of Doctorate														
	1960-69			1970-79			1980-87			1988			1989		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
TOTAL	3526	69	2.0	6171	385	6.2	5570	862	15.5	726	144	19.8	738	148	20.1
Atmospheric Physics & Chem				69	4	5.8	160	12	7.5	19			15	2	13.3
Atmospheric Dynamics				93	5	5.4	185	17	9.2	25	2	8.0	15	2	13.3
Meteorology(9)	310	4	1.3	375	11	2.9	133	8	6.0	35	7	20.0	27		
Atmos & Met Sci, Gen(2)							64	6	9.4	14	1	7.1	14	3	21.4
Atmos & Met Sci, Other				145	13	9.0	189	16	8.5	10	1	10.0	15	3	20.0
Geology(5)							683	129	18.9	143	36	25.2	165	35	21.2
Structural Geology(5)	194	4	2.1	216	12	5.6	72	8	11.1						
Geochemistry(4)	41	3	7.3	481	39	8.1	405	73	18.0	45	7	15.6	39	13	33.3
Geophysics & Seismology(6)				254	20	7.9	713	84	11.8	83	8	9.6	88	11	12.5
Geophysics(6)	316	1	0.3	483	14	2.9									
Paleontology	339	9	2.7	369	44	11.9	199	43	21.6	24	3	12.5	17	4	23.5
Minerology, Petrology(6)	50	6	12.0	472	30	6.4	267	61	22.8	19	3	15.8	36	5	13.9
Fuel Tech & Petro Eng(1)	23		0.0	82	4	4.9									
Mineral, Petrol, Geochem(6)	755	20	2.6												
Stratigraphy, Sedimentation	572	4	0.7	485	26	5.4	252	38	15.1	30	8	26.7	24	6	25.0
Geomorph & Glacial Geology	115	4	3.5	228	8	3.5	123	19	15.4	7	2	28.6	10	3	30.0
Applied Geology(1)	27	1	3.7	237	5	2.1	113	6	5.3	7	1	14.3	5		
Applied geo, geo eng(1)	233	1	0.4												
Geological Sciences, Gen(10)							77	19	24.7	9	2	22.2	19	2	10.5
Geological Sciences, Oth(10)							109	21	19.3	31	6	19.4	27	10	37.0
Earth Sciences, General(10)	121	5	4.1	372	17	4.6	131	12	9.2						
Earth Sciences, Other(10)	97	1	1.0	264	18	6.8	66	11	16.7						
Environmental Sciences(3)				420	51	12.1	390	74	19.0	58	16	27.6	68	20	29.4
Hydrology & Water Resours(7)	65	1	1.5	215	1	0.5	178	18	10.1	24	5	20.8	24	2	8.3
Oceanography	268	5	1.9	843	55	6.5	699	133	19.0	82	17	20.7	86	19	22.1
Marine Sciences(2)							151	23	15.2	28	9	32.1	26	6	23.1
Marine Sciences, Other(8)				68	8	11.8	96	16	16.7						
Physical Sciences, Other(2)							115	15	13.0	33	10	30.3	18	2	11.1

(1) In 1962 "Geological engineering" became "Applied geology, geological engineering, economic geology and petroleum engineering" and, in 1969 was split into "Applied geology, geological engineering and economic geology" and "Fuel technology and petroleum engineering." "Fuel technology and petroleum engineering was discontinued in 1983 and "Applied geology, geological engineering and economic geology" was replaced by "Applied geology." (2) Introduced in 1983. (3) In 1983 "Environmental sciences" replaced "Environmental sciences, general" and "Environmental sciences, other." (4) "Minerology, petrology, and geochemistry" was split into "Geochemistry" and "Mineralogy, petrology" in 1969. (5) "Structural geology" was deleted in 1983 and "Geology" was introduced. (6) "Geophysics" became "Geophysics, solid earth in 1976 and then "Geophysics and seismology in 1983. (7) Originally listed as "Hydrology." "Water resources added to title in 1977. (8) Introduced in 1977. Deleted in 1983. (9) Deleted in 1976 - restored in 1983. (10) "Earth science, general: and "Earth sciences, other" deleted in 1983 and "Geological sciences, general" and "Geological sciences, other" were introduced.

Source: Science and Engineering Doctorates, 1960-89, National Science Foundation and National Reserch Council

TABLE 6-24

EARTH, ATMOSPHERIC & MARINE SCIENCES PHDS BY SEX AND SUBFIELD, 1960- 1989

	All Fields			Structural Geo & Geology(1)			Atmospheric & Meterol Sci(2)			Oceanography Marine Sci(3)			Geophysics & Seismology(4)			Other		
Year	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
1960	253	3	1.2	8	0	0.0	23	0	0.0	6	0	0.0	26	0	0.0	190	3	1.6
1961	246	2	0.8	7	0	0.0	14	0	0.0	8	0	0.0	35	0	0.0	182	2	1.1
1962	249	5	2.0	17	0	0.0	17	0	0.0	14	0	0.0	19	0	0.0	182	5	2.7
1963	322	4	1.2	17	0	0.0	21	0	0.0	15	0	0.0	20	0	0.0	249	4	1.6
1964	310	5	1.6	15	0	0.0	32	1	3.1	18	0	0.0	26	0	0.0	219	4	1.8
1965	375	1	0.3	20	0	0.0	34	0	0.0	29	0	0.0	25	0	0.0	267	1	0.4
1966	404	12	3.0	28	0	0.0	34	1	2.9	39	0	0.0	32	1	3.1	271	10	3.7
1967	418	6	1.4	36	1	2.8	40	1	2.5	48	1	2.1	31	0	0.0	263	3	1.1
1968	442	11	2.5	19	1	5.3	47	1	2.1	49	1	2.0	34	0	0.0	293	8	2.7
1969	507	20	3.9	27	2	7.4	48	0	0.0	42	3	7.1	68	0	0.0	322	15	4.7
1970	510	16	3.1	12	0	0.0	55	3	5.5	66	2	3.0	67	1	1.5	310	10	3.2
1971	552	14	2.5	28	1	3.6	59	0	0.0	53	1	1.9	66	1	1.5	346	11	3.2
1972	604	22	3.6	24	1	4.2	78	2	2.6	78	1	1.3	78	3	3.8	346	15	4.3
1973	634	27	4.3	21	1	4.8	58	1	1.7	88	4	4.5	67	1	1.5	400	20	5.0
1974	629	35	5.6	15	0	0.0	57	2	3.5	81	8	9.9	80	4	5.0	396	21	5.3
1975	634	30	4.7	16	1	6.3	45	2	4.4	86	3	3.5	92	2	2.2	395	22	5.6
1976	645	63	9.8	22	1	4.5	76	8	10.5	89	14	15.7	73	4	5.5	385	36	9.4
1977	694	59	8.5	22	1	4.5	93	9	9.7	122	6	4.9	73	7	9.6	384	36	9.4
1978	623	61	9.8	28	4	14.3	77	3	3.9	126	14	11.1	60	6	10.0	332	34	10.2
1979	646	58	9.0	28	2	7.1	84	3	3.6	122	10	8.2	81	5	6.2	331	38	11.5
1980	628	64	10.2	20	1	5.0	90	8	8.9	110	15	13.6	71	2	2.8	337	38	11.3
1981	583	56	9.6	27	1	3.7	75	3	4.0	100	9	9.0	72	6	8.3	309	37	12.0
1982	657	103	15.7	25	6	24.0	65	4	6.2	133	23	17.3	81	6	7.4	353	64	18.1
1983	637	97	15.2	105	17	16.2	97	6	6.2	109	25	22.9	75	8	10.7	251	41	16.3
1984	614	106	17.3	124	22	17.7	81	8	9.9	99	27	27.3	68	7	10.3	242	42	17.4
1985	617	111	18.0	111	21	18.9	80	4	5.0	92	23	25.0	92	13	14.1	242	50	20.7
1986	589	100	17.0	118	23	19.5	78	8	10.3	100	11	11.0	89	18	20.2	204	40	19.6
1987	627	114	18.2	114	25	21.9	87	14	16.1	111	16	14.4	74	11	14.9	241	48	19.9
1988	726	144	19.8	143	36	25.2	103	11	10.7	110	26	23.6	83	8	9.6	287	63	22.0
1989	738	148	20.1	165	35	21.2	86	10	11.6	112	25	22.3	77	11	14.3	298	67	22.5

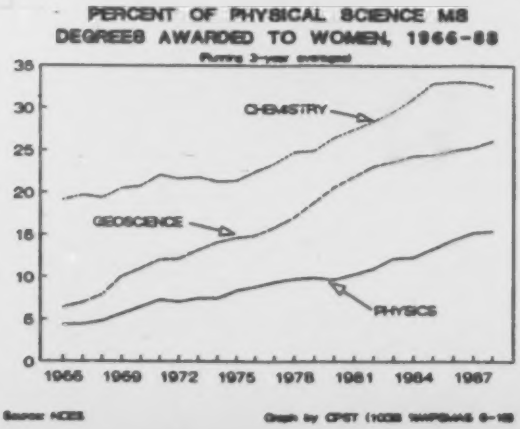
(1) Structural Geology from 1960 thru 1982. (2) Includes Meterology, deleted in 1976 & reinstated in 1983, Atmospheric and Meterological Sciences, Other, Atmospheric Dynamics and Atmospheric Physics & Chemistry each introduced in 1976 and Atmospheric & Meterological Sciences, General introduced in 1983. (3) Includes Marine Sciences, Other from 1977 thru 1982 and Marine Sciences from 1983. (4) Geophysics replaced by Geophysics & Seismololgy in 1976.

SOURCE: Earned Degrees Conferred Series, 1966-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-25
MASTERS DEGREES IN THE ENVIRONMENTAL SCIENCES BY SUBFIELD AND SEX
1966 – 1989

	Total Envt Sci			Atmos Sci & Met				Geosciences				Oceanography			
Year	No.	Women	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W
1966	759	45	5.9	97	12.8	2	2.1	594	78.3	37	6.2	68	9.0	6	8.8
1967	971	55	5.7	169	17.4	5	3.0	706	72.7	47	6.7	96	9.9	3	3.1
1968	1,008	71	7.0	112	11.1	2	1.8	787	78.1	63	8.0	109	10.8	6	5.5
1969	1,124	89	7.9	140	12.5	5	3.6	861	76.6	77	8.9	123	10.9	7	5.7
1970	1,124	125	11.1	134	11.9	3	2.2	847	75.4	112	13.2	143	12.7	10	7.0
1971	1,227	116	9.5	153	12.5	4	2.6	922	75.1	100	10.8	152	12.4	12	7.9
1972	1,408	152	10.8	168	11.9	4	2.4	1,067	75.8	130	12.2	173	12.3	18	10.4
1973	1,470	176	12.0	174	11.8	9	5.2	1,142	77.7	154	13.5	154	10.5	13	8.4
1974	1,679	197	11.7	195	11.6	7	3.6	1,285	76.5	179	13.9	199	11.9	11	5.5
1975	1,503	194	12.9	183	12.2	10	5.5	1,151	76.6	172	14.9	169	11.2	12	7.1
1976	1,581	220	13.9	197	12.5	17	8.6	1,232	77.9	186	15.1	152	9.6	17	11.2
1977	1,659	226	13.6	213	12.8	12	5.6	1,300	78.4	191	14.7	146	8.8	23	15.8
1978	1,832	290	15.8	199	10.9	12	6.0	1,456	79.5	257	17.7	177	9.7	21	11.9
1979	1,777	310	17.4	181	10.2	16	8.8	1,435	80.8	270	18.8	161	9.1	24	14.9
1980	1,793	336	18.7	170	9.5	14	8.2	1,481	82.6	295	19.9	142	7.9	27	19.0
1981	1,876	406	21.6	174	9.3	20	11.5	1,527	81.4	352	23.1	175	9.3	34	19.4
1982	2,012	452	22.5	164	8.2	24	14.6	1,682	83.6	381	22.7	166	8.3	47	28.3
1983	1,959	444	22.7	183	9.3	24	13.1	1,673	85.4	394	23.6	103	5.3	26	25.2
1984	1,982	465	23.5	246	12.4	33	13.4	1,617	81.6	401	24.8	119	6.0	31	26.1
1985	2,160	521	24.1	236	10.9	40	16.9	1,806	83.6	445	24.6	118	5.5	36	30.5
1986	2,234	517	23.1	204	9.1	32	15.7	1,895	84.8	451	23.8	135	6.0	34	25.2
1987	2,051	520	25.4	216	10.5	29	13.4	1,729	84.3	457	26.4	106	5.2	34	32.1
1988	1,920	487	25.4	191	9.9	36	18.8	1,630	84.9	421	25.8	99	5.2	30	30.3
1989	1,716	451	26.3	206	12.0	32	15.5	1,408	82.1	381	27.1	102	5.9	38	37.3
66-69	3,862	260	6.7	518	13.4	14	2.7	2,948	76.3	224	7.6	396	10.3	22	5.6
70-79	15,260	2,006	13.1	1,797	11.8	94	5.2	11,837	77.6	1,751	14.8	1,626	10.7	161	9.9
80-89	19,703	4,599	23.3	1,990	10.1	284	14.3	16,448	83.5	3,978	24.2	1,265	6.4	337	26.6
TOTAL	38,825	6,865	17.7	4,305	11.1	392	9.1	31,233	80.4	5,953	19.1	3,287	8.5	520	15.8

CHART 6-2



Source: Science and Engineering Degrees: 1966-89, a Source Book, National Science Foundation, NSF 90-312
and Earned Degrees Conferred, 1989, NCES

TABLE 6-26
BACHELORS DEGREES IN THE ENVIRONMENTAL SCIENCES BY SUBFIELD AND SEX
1966 – 1989

	Total Envt Sci			Atmospheric Sci				Geoscience				Oceanography			
Year	No.	Women	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W
1966	1,712	161	9.4	184	10.7	3	1.6	1,510	88.2	157	10.4	18	1.1	1	5.6
1967	1,936	197	10.2	212	11.0	4	1.9	1,685	87.0	191	11.3	39	2.0	2	5.1
1968	2,339	234	10.0	222	9.5	5	2.3	2,043	87.3	224	11.0	74	3.2	5	6.8
1969	2,924	291	10.0	228	7.8	13	5.7	2,583	88.3	273	10.6	113	3.9	5	4.4
1970	3,351	343	10.2	232	6.9	1	0.4	3,002	89.6	334	11.1	117	3.5	8	6.8
1971	3,562	383	10.8	249	7.0	4	1.6	3,085	86.6	373	12.1	228	6.4	6	2.6
1972	4,055	495	12.2	289	7.1	16	5.5	3,410	84.1	471	13.8	356	8.8	8	2.2
1973	4,374	532	12.2	251	5.7	9	3.6	3,831	87.6	504	13.2	292	6.7	19	6.5
1974	4,823	768	15.9	294	6.1	15	5.1	4,292	89.0	739	17.2	237	4.9	14	5.9
1975	4,877	827	17.0	306	6.3	21	6.9	4,318	88.5	788	18.2	253	5.2	18	7.1
1976	5,046	922	18.3	365	7.2	36	9.9	4,441	88.0	873	19.7	240	4.8	13	5.4
1977	5,653	1,174	20.8	373	6.6	35	9.4	4,998	88.4	1,102	22.0	282	5.0	37	13.1
1978	6,003	1,294	21.6	353	5.9	35	9.9	5,416	90.2	1,231	22.7	234	3.9	28	12.0
1979	6,082	1,387	22.8	326	5.4	37	11.3	5,467	89.9	1,314	24.0	289	4.8	36	12.5
1980	6,155	1,462	23.8	367	6.0	42	11.4	5,536	89.9	1,366	24.7	252	4.1	54	21.4
1981	6,694	1,666	24.9	359	5.4	57	15.9	6,110	91.3	1,560	25.5	225	3.4	49	21.8
1982	7,061	1,807	25.6	412	5.8	66	16.0	6,429	91.0	1,698	26.4	220	3.1	43	19.5
1983	7,298	1,848	25.3	396	5.4	66	16.7	6,774	92.8	1,767	26.1	128	1.8	15	11.7
1984	7,925	1,934	24.4	478	6.0	98	20.5	7,285	91.9	1,808	24.8	162	2.0	28	17.3
1985	7,576	1,861	24.6	414	5.5	68	16.4	7,001	92.4	1,757	25.1	161	2.1	36	22.4
1986	6,076	1,354	22.3	355	5.8	59	16.6	5,555	91.4	1,263	22.7	166	2.7	32	19.3
1987	4,689	1,060	22.6	345	7.4	61	17.7	4,189	89.3	971	23.2	155	3.3	28	18.1
1988	3,554	847	23.8	348	9.8	57	16.4	3,061	86.1	763	24.9	145	4.1	27	18.6
1989	2,723	656	24.1	330	12.1	52	15.8	2,249	82.6	567	25.2	144	5.3	37	25.7
60-69	8,911	883	9.9	846	9.5	25	3.0	7,821	87.8	845	10.8	244	2.7	13	5.3
70-79	47,826	8,125	17.0	3,038	6.4	209	6.9	42,260	88.4	7,729	18.3	2,528	5.3	187	7.4
80-89	59,751	14,495	24.3	3,804	6.4	626	16.5	54,189	90.7	13,520	24.9	1,758	2.9	349	19.9
TOTAL	116,488	23,503	20.2	7,688	6.6	860	11.2	104,270	89.5	22,094	21.2	4,530	3.9	549	12.1

SOURCE: Earned Degrees Conferred Series, 1966–89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-27

PhD DEGREES IN THE ENVIRONMENTAL SCIENCES BY SUBFIELD AND SEX, 1966 – 1989

	Total Envt Sci			Atmos Sci & Met				Geosciences				Oceanography			
Year	No.	Women	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W
1966	404	12	3.0	34	8.4	1	2.9	331	81.9	11	3.3	39	9.7	0	0.0
1967	415	6	1.4	40	9.6	1	2.5	327	78.8	4	1.2	48	11.6	1	2.1
1968	433	11	2.5	47	10.9	1	2.1	337	77.8	9	2.7	49	11.3	1	2.0
1969	496	20	4.0	48	9.7	0	0.0	406	81.9	17	4.2	42	8.5	3	7.1
1970	498	15	3.0	55	11.0	3	5.5	377	75.7	10	2.7	66	13.3	2	3.0
1971	536	13	2.4	59	11.0	0	0.0	424	79.1	12	2.8	53	9.9	1	1.9
1972	576	21	3.6	78	13.5	2	2.6	420	72.9	18	4.3	78	13.5	1	1.3
1973	569	22	3.9	58	10.2	1	1.7	423	74.3	17	4.0	88	15.5	4	4.5
1974	562	28	5.0	57	10.1	2	3.5	424	75.4	18	4.2	81	14.4	8	9.9
1975	548	22	4.0	45	8.2	2	4.4	417	76.1	17	4.1	86	15.7	3	3.5
1976	580	52	9.0	76	13.1	8	10.5	415	71.6	30	7.2	89	15.3	14	15.7
1977	635	52	8.2	93	14.6	9	9.7	420	66.1	37	8.8	122	19.2	6	4.9
1978	576	54	9.4	77	13.4	3	3.9	373	64.8	37	9.9	126	21.9	14	11.1
1979	589	51	8.7	84	14.3	3	3.6	383	65.0	38	9.9	122	20.7	10	8.2
1980	588	58	9.9	90	15.3	8	8.9	388	66.0	35	9.0	110	18.7	15	13.6
1981	529	45	8.5	75	14.2	3	4.0	354	66.9	33	9.3	100	18.9	9	9.0
1982	604	92	15.2	65	10.8	4	6.2	406	67.2	65	16.0	133	22.0	23	17.3
1983	574	84	14.6	97	16.9	6	6.2	368	64.1	53	14.4	109	19.0	25	22.9
1984	563	97	17.2	81	14.4	8	9.9	383	68.0	62	16.2	99	17.6	27	27.3
1985	557	102	18.3	80	14.4	4	5.0	385	69.1	75	19.5	92	16.5	23	25.0
1986	524	87	16.6	78	14.9	8	10.3	346	66.0	68	19.7	100	19.1	11	11.0
1987	573	106	18.5	87	15.2	14	16.1	375	65.4	76	20.3	111	19.4	16	14.4
1988	635	118	18.6	103	16.2	11	10.7	422	66.5	81	19.2	110	17.3	26	23.6
1989	514	102	19.8	67	13.0	7	10.4	358	69.6	70	19.6	89	17.3	25	28.1
66–69	1,748	49	2.8	169	9.7	3	1.8	1,401	80.1	41	2.9	178	10.2	5	2.8
70–79	5,669	330	5.8	682	12.0	33	4.8	4,076	71.9	234	5.7	911	16.1	63	6.9
80–89	5,661	891	15.7	823	14.5	73	8.9	3,785	66.9	618	16.3	1,053	18.6	200	19.0
TOTAL	13,078	1,270	9.7	1,674	12.8	109	6.5	9,262	70.8	893	9.6	2,142	16.4	268	12.5

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 6-28

EARTH, ATMOSPHERIC & MARINE SCIENCES DOCTORATES BY RACE/ETHNICITY, 1975 – 1989
(U.S. Citizens and Non-U.S. Permanent Visa-Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	530	500	30	5.7	453	24	90.0	0	1	4	0	0	0	0.9	19	0	3.6
1976	540	485	55	10.2	442	49	90.9	0	0	0	0	0	0	0.0	18	3	3.9
1977	581	530	51	8.8	471	47	89.2	2	0	12	0	0	0	2.4	18	3	3.6
1978	540	484	56	10.4	413	53	86.3	4	0	5	0	0	0	1.7	23	2	4.6
1979	566	514	52	9.2	455	47	88.7	3	0	6	0	2	0	1.9	21	0	3.7
1980	538	478	60	11.2	432	53	90.1	1	0	3	1	2	0	1.3	16	4	4.1
1981	488	440	48	9.8	402	46	91.8	4	0	6	0	0	0	2.0	12	2	2.9
1982	557	461	96	17.2	424	86	91.6	3	0	5	2	0	0	1.8	21	6	4.8
1983	513	425	88	17.2	379	74	88.3	1	0	11	0	2	0	2.7	18	8	5.1
1984	499	402	97	19.4	370	91	92.4	2	1	2	0	0	0	1.0	17	2	3.8
1985	474	382	92	19.4	343	87	90.7	4	0	5	1	1	0	2.3	20	1	4.4
1986	446	365	81	18.2	335	78	92.6	1	0	4	1	1	1	1.8	13	1	3.1
1987	449	359	90	20.0	322	85	90.6	1	1	4	1	0	0	1.6	15	3	4.0
1988	542	422	120	22.1	392	108	92.3	3	0	4	4	1	1	2.4	11	4	2.8
1989	557	437	120	21.5	397	110	91.0	3	1	6	3	4	2	3.4	19	4	4.1
Totals	7,820	6,684	1,136	14.5	6,030	1,038	90.4	32	4	77	13	13	4	1.8	263	43	3.9

* The data for 'All races' include recipients whose race/ethnicity is unknown.

FIELD: Geosciences

SOURCE: Enrollment and Degree Surveys of the American Geological Institute

TABLE 6-29

ENROLLMENT IN GEOSCIENCE DEPARTMENTS BY EDUCATIONAL LEVEL, FIELD AND SEX, SELECTED YEARS 1980-81 - 1988-89

DEPARTMENT and YEAR	Freshmen and Soph			Juniors			Seniors			Undergraduates			Masters			Doctorates		
	Total	Wom	% W	Total	Wom	% W	Total	Wom	% W	Total	Wom	% W	Total	Wom	% W	Total	Wom	% W
ALL FIELDS																		
1980-81	11752	2811	23.9	9454	2336	24.7	10738	2652	24.7	31944	7799	24.4	7370	1794	24.3	2810	530	18.9
1981-82	13247	3121	23.6	10059	2504	24.9	11046	2727	24.7	34352	8352	24.3	7349	1825	24.8	2759	558	20.2
1982-83	13146	2994	22.8	10845	2662	24.5	12901	3176	24.6	36892	8832	23.9	7511	1869	24.9	2897	621	21.4
1985-86*	7966	2124	26.7	6615	1705	25.8	10522	2629	25.0	25102	6459	25.7	9017	2323	25.8	4296	1012	23.6
1987-88*	6321	2295	36.3	3298	923	28.0	5008	1208	24.1	14626	4425	30.3	6209	1580	25.4	3454	750	21.7
1988-89*	10751	4534	42.2	4376	1550	35.4	5911	1778	30.1	21039	7861	37.4	6665	1688	25.3	4604	1041	22.6
Geology																		
1980-81	9113	2114	23.2	7511	1817	24.2	8423	2059	24.4	25047	5990	23.9	4883	1164	23.8	1257	245	19.5
1981-82	10390	2307	22.2	8009	2013	25.1	8756	2151	24.6	27155	6471	23.8	5060	1249	24.7	1116	223	20.0
1982-83	9943	2263	22.8	8574	2122	24.7	10210	2557	25.0	28727	6942	24.2	5007	1270	25.4	1150	250	21.7
1985-86	4662	1249	26.8	4513	1141	25.3	7441	1863	25.0	16617	4254	25.6	6104	1590	26.0	2004	499	24.9
1987-88	4555	1560	34.2	2781	810	29.1	4098	1016	24.8	11434	3386	29.6	4786	1225	25.6	2156	480	22.3
1988-89	4708	1560	33.1	2743	909	33.1	3900	1150	29.5	11350	3619	31.9	4084	1043	25.5	2261	515	22.8
Geophysics																		
1980-81	290	64	22.1	279	63	22.6	304	53	17.4	873	180	20.6	534	88	16.5	359	52	14.5
1981-82	303	59	19.5	221	52	23.5	353	78	22.1	877	189	21.6	499	84	16.8	393	63	16.0
1982-83	449	99	22.0	362	74	20.4	383	84	21.9	1194	257	21.5	508	90	17.7	422	66	15.6
1985-86	188	49	26.0	173	35	20.4	437	13	26.0	798	198	24.8	584	122	20.9	578	104	17.9
1987-88	236	76	32.3	114	3	2.2	286	65	22.7	636	144	22.6	596	100	16.8	575	95	16.5
1988-89	156	40	25.6	119	29	24.2	183	38	20.5	458	106	23.2	665	108	16.2	715	110	15.4
Oceanography/Marine Science																		
1980-81	453	87	19.2	188	40	21.3	240	56	23.3	881	183	20.8	781	227	29.1	681	142	20.9
1981-82	487	112	23.0	198	30	15.2	202	36	17.8	887	178	20.1	740	218	29.5	699	160	22.9
1982-83	507	110	21.7	227	49	21.6	226	43	19.0	960	202	21.0	781	216	27.7	677	169	25.0
1985-86	511	105	20.5	216	49	22.6	249	51	20.6	976	205	21.0	789	280	35.5	917	243	26.5
1987-88	1413	630	44.6	293	83	28.2	336	78	23.0	2041	790	38.7	615	224	36.4	636	168	26.3
1988-89	1216	738	60.6	251	80	31.8	306	96	31.4	1774	914	51.5	426	148	34.6	819	224	27.3
Geological Engineering																		
1980-81	621	144	23.2	336	67	19.9	426	72	16.9	1383	283	20.5	128	22	17.2	36	0	0.0
1981-82	738	159	21.5	405	76	18.8	483	98	20.3	1626	333	20.5	137	24	17.5	31	1	3.2
1982-83	1040	203	19.5	656	104	15.9	856	120	14.0	2552	427	16.7	292	46	15.8	95	7	7.4
1985-86	400	83	20.7	365	63	17.4	773	139	18.0	1538	285	18.6	279	27	9.6	67	1	1.9
1987-88	118	29	24.5	110	28	25.0	288	49	17.0	515	105	20.4	211	31	14.8	86	8	8.7
1988-89	246	58	23.4	131	28	21.0	268	50	18.7	645	135	20.9	278	45	16.2	159	18	11.0
Geophysical Engineering																		
1980-81	96	21	21.9	60	14	23.3	79	14	17.7	235	49	20.9	92	13	14.1	8	0	0.0
1981-82	110	23	20.9	80	20	25.0	94	14	14.9	284	57	20.1	84	11	13.1	18	0	0.0
1982-83	151	35	23.2	73	10	13.7	104	23	22.1	328	68	20.7	78	13	16.7	17	1	5.9
1985-86	88	20	22.2	51	6	11.9	177	39	22.1	316	65	20.5	89	21	23.3	21	4	17.6
1987-88	19	6	33.3	6	3	40.0	25	5	20.0	50	14	27.5	23	3	11.1	5	1	25.0
1988-89	28	8	27.3	8	3	33.3	25	4	15.0	60	14	22.9	26	0	0.0	20	6	31.3
Geochemistry																		
1980-81	17	1	5.9	17	0	0.0	25	9	36.0	59	10	16.9	226	67	29.6	180	33	18.3
1981-82	25	5	20.0	27	3	11.1	22	4	18.2	74	12	16.2	182	50	27.5	195	45	23.1
1982-83	7	0	0.0	14	3	21.4	18	3	16.7	39	6	15.4	124	42	33.9	169	42	24.9
1985-86	39	10	25.0	30	15	48.0	37	10	26.7	106	34	32.2	213	65	30.3	212	66	31.0
1987-88	9	1	14.3	5	4	75.0	14	3	18.2	28	8	27.3	140	44	31.3	191	60	31.4
1988-89	13	5	40.0	8	3	33.3	9	0	0.0	29	8	26.1	110	29	26.1	221	70	31.6

FIELD: Geosciences

SOURCE: Enrollment and Degree Surveys of the American Geological Institute

TABLE 6-29 (continued)

ENROLLMENT IN GEOSCIENCE DEPARTMENTS BY EDUCATIONAL LEVEL, FIELD AND SEX, SELECTED YEARS 1980-81 - 1988-89

DEPARTMENT and YEAR	Freshmen and Soph			Juniors			Seniors			Undergraduates			Masters			Doctorates		
	Total	Wom	% W	Total	Wom	% W	Total	Wom	% W	Total	Wom	% W	Total	Wom	% W	Total	Wom	% W
Hydrology																		
1980-81	20	3	15.0	31	5	16.1	42	8	19.0	93	16	17.2	195	42	21.5	38	6	15.8
1981-82	24	6	25.0	29	6	20.7	38	7	18.4	91	19	20.9	205	54	26.3	49	7	14.3
1982-83	24	5	20.8	44	14	31.8	42	6	14.3	110	25	22.7	194	41	21.1	59	14	23.7
1985-86	29	6	20.8	43	7	17.1	62	17	27.5	134	30	22.7	418	100	23.9	90	15	16.2
1987-88	40	13	31.3	25	5	20.0	51	11	22.0	116	29	24.7	404	96	23.8	79	20	25.4
1988-89	34	5	14.8	39	10	25.8	98	26	26.9	170	41	24.3	549	135	24.6	111	23	20.2
Mineralogy																		
1980-81	4	0	0.0	4	1	25.0	4	0	0.0	12	1	8.3	55	17	30.9	36	6	16.7
1981-82	16	3	18.8	99	18	18.2	3	1	33.3	118	22	18.6	49	12	24.5	49	7	14.3
1982-83	66	8	12.1	64	6	9.4	93	15	16.1	223	29	13.0	100	21	21.0	68	16	23.5
1985-86	39	4	9.4	16	5	30.8	11	5	44.4	66	13	20.4	20	9	43.8	33	10	29.6
1987-88	28	5	18.2	8	0	0.0	16	1	7.7	51	6	12.2	30	10	33.3	43	16	38.2
1988-89	16	5	30.8	9	1	14.3	13	3	20.0	38	9	23.3	20	9	43.8	26	9	33.3
Paleontology																		
1980-81	8	1	12.5	13	5	38.5	8	1	12.5	29	7	24.1	120	43	35.8	96	22	22.9
1981-82	25	7	28.0	89	19	21.3	21	6	28.6	135	32	23.7	94	31	33.0	105	31	29.5
1982-83	9	2	22.2	22	5	22.7	13	4	30.8	44	11	25.0	87	26	29.9	83	24	28.9
1985-86	12	5	40.0	16	4	23.1	22	9	38.9	50	17	34.1	106	32	29.9	109	26	23.6
1987-88	15	4	25.0	4	0	0.0	15	4	25.0	34	8	22.2	90	40	44.4	155	44	28.2
1988-89	10	5	50.0	9	4	42.9	21	9	41.2	40	18	43.8	68	23	33.3	124	25	20.2
Soil Science																		
1980-81	8	1	12.5	41	20	48.8	53	23	43.4	102	44	43.1	8	3	37.5	2	1	50.0
1981-82	25	7	28.0	10	2	20.0	15	3	20.0	50	12	24.0	0	0		1	1	100
1982-83	9	2	22.2	11	3	27.3	10	2	20.0	30	7	23.3	0	0		1	0	0.0
1985-86	28	4	13.0	17	4	21.4	27	6	22.7	72	13	18.6				0	0	
1987-88	15	4	25.0	34	13	37.0	18	5	28.6	66	21	32.1	4	0	0.0	0	0	
1988-89	16	6	38.5	19	9	46.7	20	8	37.5	55	23	40.9	21	9	41.2	30	8	25.0
Environmental Sciences																		
1980-81	425	180	42.4	373	124	33.2	451	118	26.2	1249	422	33.8	125	42	33.6	36	11	30.6
1981-82	380	218	57.4	350	91	26.0	368	97	26.4	1098	406	37.0	124	42	33.9	29	6	20.7
1982-83	205	70	34.1	237	91	38.4	262	104	39.7	704	265	37.6	134	60	44.8	56	14	25.0
1985-86	893	239	26.8	423	139	32.9	449	152	34.0	1765	530	30.1	128	49	38.1	46	16	34.2
1987-88	276	101	36.7	289	106	36.8	336	131	39.0	901	339	37.6	156	73	46.4	109	24	21.8
1988-89	513	220	42.9	326	133	40.6	249	85	34.2	1088	438	40.2	181	81	44.8	46	10	21.6
Earth Sciences Teaching																		
1980-81	84	29	34.5	140	63	45.0	148	63	42.6	372	155	41.7	77	28	36.4	2	0	0.0
1981-82	85	32	37.6	109	47	43.1	111	53	47.7	305	132	43.3	62	20	32.3	3	2	66.7
1982-83	83	39	47.0	102	49	48.0	142	77	54.2	327	165	50.5	54	21	38.9	2	1	50.0
1985-86	221	83	37.6	188	63	33.8	187	60	32.0	596	206	34.6	77	26	33.3	5	0	0.0
1987-88	331	140	42.3	274	128	46.6	324	123	37.8	929	390	42.0	126	51	40.6	14	5	36.4
1988-89	415	180	43.4	380	236	62.2	416	210	50.5	1211	626	51.7	69	26	38.2	10	5	50.0
Earth Science, General																		
1980-81	613	166	27.1	461	117	25.4	535	176	32.9	1609	459	28.5	146	38	26.0	79	12	15.2
1981-82	639	183	28.6	433	127	29.3	580	179	30.9	1652	489	29.6	113	30	26.5	71	12	16.9
1982-83	653	158	24.2	459	132	28.8	542	138	25.5	1654	428	25.9	152	23	15.1	98	17	17.3
1985-86	856	270	31.5	563	173	30.7	651	165	25.3	2071	607	29.3	210	43	20.3	215	43	19.9
1987-88	1018	434	42.6	340	113	33.1	439	128	29.1	1796	674	37.5	100	26	26.3	59	20	34.0
1988-89	3381	1705	50.4	336	108	32.0	405	100	24.7	4123	1913	46.4	169	34	20.0	61	20	32.7

* Because not all departments returned questionnaires, 1985-86 and 1987-88 datas are 1.2 times and 1988-89 data are 1.25 times the acutal data provided by the AGI in order to present totals more likely to be representative of all degree granting departments.

FIELD: Geological Sciences

SOURCE: "Women in Academia: Students and Professors Revisited," GEOLOGY, V. 15, August 1987.

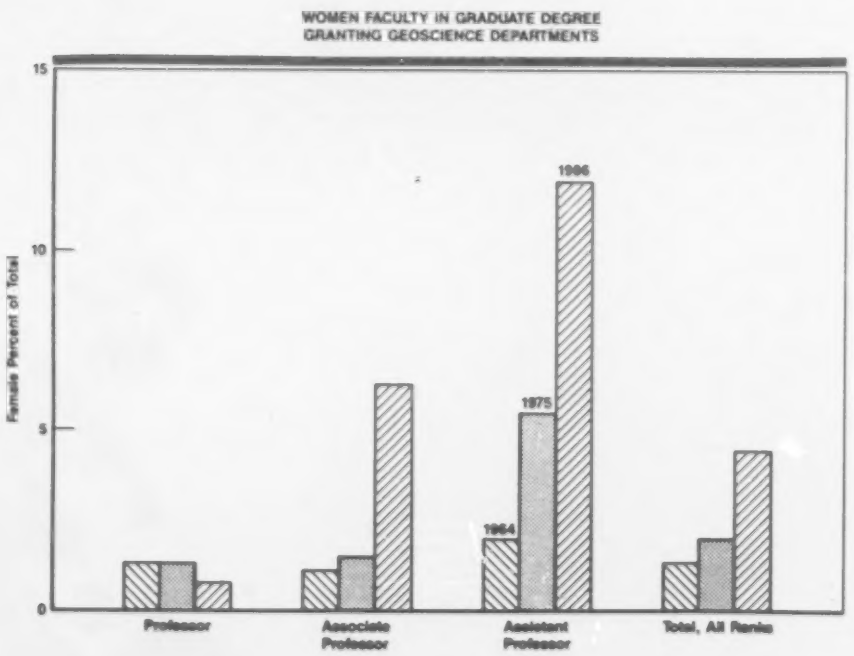
TABLE 6-30

FACULTY IN U.S. DEPARTMENTS OF GEOLOGICAL SCIENCES, 1986-87

Graduate Depts. (M.S./M.A. & PhD)	Professor	Associate Professor	Assistant Professor	Lecturer/ Instructor	All Ranks Total
Men	1,958	855	620	97	3,530
Women	15	57	83	14	169
Total	1,973	912	703	111	3,699
Percent Women	0.76	6.3	11.8	12.6	4.6
Undergraduate Dept. (2 Year and BA/BS)					
Men	754	296	307	202	1,559
Women	25	26	47	47	145
Total	779	322	354	249	1,704
Percent Women	3.2	8.1	13.3	18.9	8.5

Note: Male-Female distinction made on basis of first name

CHART 6-3



FIELD: Mathematics, Computer Sciences and Statistics

SOURCE: Doctorate Records File and Summary Reports: Doctorate Recipients from United States Universities, 1972 - 1989, National Research Council

TABLE 6-31

PhD AWARDS IN MATHEMATICS AND COMPUTER/INFORMATION SCIENCE BY SUBFIELD AND SEX, 1960 – 1989

Subfields	Year of Doctorate														
	1960-69			1970-79			1980-88			1988			1989		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
TOTAL MATH & COMP SCIENCE	6407	363	5.7	11240	1130	10.1	9161	1309	14.3	1263	177	14.0	1473	263	17.9
MATHEMATICS TOTAL	6407	363	5.7	10877	1086	10.0	6439	989	15.4	749	121	16.2	861	156	18.1
Applied Mathematics	831	26	3.1	1181	67	5.7	1062	167	15.7	142	17	12.0	158	28	17.7
Algebra	949	88	9.3	1330	209	15.7	527	102	19.4	54	10	18.5	50	10	20.0
Analysis & Funct Anal(1)	1616	84	5.2	1901	158	8.3	774	89	11.5	76	15	19.7	101	20	19.8
Geometry	215	14	6.5	302	35	11.6	305	25	8.2	44	4	9.1	47	7	14.9
Logic	183	12	6.6	293	31	10.6	206	19	9.2	19	2	10.5	12	5	41.7
Number Theory	181	23	12.7	270	32	11.9	197	23	11.7	26	5	19.2	23	5	21.7
Probability & Math Stat(3)	894	44	4.9	1469	179	12.2	1395	272	19.5	152	31	20.4	167	38	22.8
Topology	790	30	3.8	975	85	8.7	388	59	15.2	27	3	11.1	37	8	21.6
Computing Theory & Pract	255	5	2.0	1345	99	7.4	119	11	9.2	12	3	25.0	12	1	8.3
Operations Research(2)				246	19	7.7	255	37	14.5	29	3	10.3	22	4	18.2
Mathematics, General	276	19	6.9	999	116	11.6	840	112	13.3	135	20	14.8	181	18	9.9
Mathematics, Other	217	18	8.3	566	56	9.9	371	73	19.7	33	8	24.2	51	12	23.5
COMPUTER/INFORMATION SCI				363	44	12.1	2722	320	11.8	514	56	10.9	612	107	17.5
Computer Science(4)				363	44	12.1	2429	255	10.5	442	39	8.8	519	69	13.3
Info Sciences & Systems(5)							293	65	22.2	72	17	23.6	93	38	40.9

(1) "Anaylisis" before 1968. (2) Introduced in 1973. (3) "Math statistics" removed from the mame of this subfield in 1969, but restored in 1972.
(4) Introduced in 1977. (5) Introduced in 1983.

FIELD: Mathematical Sciences

SOURCE: 1990 Annual AMS-MAA Survey, First Report, The American Mathematical Society Notices, November 1990

TABLE 6-32

MATHEMATICAL SCIENCES* PhDs BY CITIZENSHIP AND SEX, 1973 THRU 1989

YEAR	Total#	Foreign	%	U.S. CITIZENS				
				Total U.S.	%	MEN	WOMEN	% W
1973	986	212	21.5	774	78.5	696	78	10.1
1974	938	261	27.8	677	72.2	618	59	8.7
1975	999	258	25.8	741	74.2	658	83	11.2
1976	965	243	25.2	722	74.8	636	86	11.9
1977	901	212	23.5	689	76.5	602	87	12.6
1978	868	234	27.0	634	73.0	545	89	14.0
1979	806	210	26.1	596	73.9	503	93	15.6
1980	791	213	26.9	578	73.1	491	87	15.1
1981	839	272	32.4	567	67.6	465	102	18.0
1982	798	279	35.0	519	65.0	431	88	17.0
1983	744	289	38.8	455	61.2	366	89	19.6
1984	738	305	41.3	433	58.7	346	87	20.1
1985	726	330	45.5	396	54.5	315	81	20.5
1986	755	369	48.9	386	51.1	304	82	21.2
1987	739	377	51.0	362	49.0	289	73	20.2
1988	798	435	54.5	363	45.5	287	76	20.9
1989	884	473	53.5	411	46.5	313	98	23.8
1990	929	528	56.8	401	43.2	312	89	22.2
Total	15204	5500	36.2	9704	63.8	8177	1527	15.7

* Does not include Computer Science degrees.
\# Includes only those whose citizenship is known.

SOURCE: Doctorate Records File and Summary Reports: Doctorate Recipients from United States Universities, 1972 - 1989, National Research Council

TABLE 6-33

MATHEMATICAL AND COMPUTER SCIENCES PhD AWARDS BY CITIZENSHIP AND VISA TYPE, 1960 – 1989

YEAR	U.S.			FOREIGN						Citizen-ship
				Total		Immigrant		Temporary		
	TOTAL	No.	%	No.	%	No.	%	No.	%	Unknown
1960	291	233	80.1	55	18.9	11	3.8	44	15.1	3
1961	332	272	81.9	51	15.4	7	2.1	44	13.3	9
1962	388	312	80.4	72	18.6	7	1.8	65	16.8	4
1963	483	401	83.0	72	14.9	11	2.3	61	12.6	10
1964	588	489	83.2	89	15.1	9	1.5	80	13.6	10
1965	685	578	84.4	92	13.4	16	2.3	76	11.1	15
1966	769	634	82.4	119	15.5	22	2.9	97	12.6	16
1967	830	692	83.4	119	14.3	27	3.3	92	11.1	19
1978	970	798	82.3	154	15.9	42	4.3	112	11.5	18
1969	1,065	887	83.3	163	15.3	49	4.6	114	10.7	15
1970	1,224	1,018	83.2	191	15.6	57	4.7	134	10.9	15
1971	1,238	1,012	81.7	214	17.3	62	5.0	152	12.3	12
1972	1,281	1,030	80.4	234	18.3	65	5.1	169	13.2	17
1973	1,232	951	77.2	254	20.6	81	6.6	173	14.0	27
1874	1,208	873	72.3	296	24.4	71	5.9	224	18.5	40
1975	1,147	848	73.9	272	23.7	75	6.5	197	17.2	27
1976	1,003	748	74.6	238	23.7	55	5.5	183	18.2	17
1977	959	710	74.0	224	23.4	54	5.6	170	17.7	25
1978	959	704	73.4	233	24.3	52	5.4	181	18.9	22
1979	980	715	73.0	244	24.9	63	6.4	181	18.5	21
1980	962	676	70.3	257	26.7	75	7.8	182	18.9	29
1981	952	640	67.2	289	30.4	63	6.6	226	23.7	23
1982	934	601	64.3	304	32.5	53	5.7	251	26.9	29
1983	980	591	60.3	354	36.1	73	7.4	281	28.7	35
1984	974	585	60.1	374	38.4	53	5.4	321	33.0	15
1985	990	565	57.1	393	39.7	66	6.7	327	33.0	32
1986	1,101	568	51.6	478	43.4	83	7.5	395	35.9	55
1987	1,158	588	50.8	527	45.5	83	7.2	444	38.3	43
1988	1,254	626	49.9	567	45.2	86	6.9	481	38.4	61
1989	1,334	730	54.7	604	45.3	82	6.1	522	39.1	0
TOTAL	28,271	20,075	71.0	7,532	26.6	1,553	5.5	5,979	21.1	664

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 6-34

MATHEMATICS DOCTORATES BY RACE/ETHNICITY, 1975 – 1989
(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	923	833	90	9.8	716	80	86.2	9	2	7	1	3	0	2.4	57	5	6.7
1976	803	708	95	11.8	613	85	86.9	5	0	9	0	0	0	1.7	42	7	6.1
1977	744	648	96	12.9	567	82	87.2	10	0	7	3	1	0	2.8	34	8	5.6
1978	666	570	96	14.4	483	80	84.5	11	2	5	0	0	1	2.9	33	10	6.5
1979	603	504	99	16.4	420	85	83.7	11	0	7	3	0	0	3.5	39	7	7.6
1980	582	496	86	14.8	423	73	85.2	7	5	5	0	0	0	2.9	36	6	7.2
1981	525	439	86	16.4	376	72	85.3	8	1	4	1	1	0	2.9	30	10	7.6
1982	499	419	80	16.0	371	66	87.6	4	2	5	1	1	0	2.6	25	7	6.4
1983	457	371	86	18.8	319	76	86.4	2	1	5	2	0	0	2.2	28	6	7.4
1984	443	357	86	19.4	308	72	85.8	3	1	10	1	3	0	4.1	20	10	6.8
1985	418	336	82	19.6	280	70	83.7	7	0	7	5	0	0	4.5	27	6	7.9
1986	402	329	73	18.2	282	61	85.3	3	3	9	3	0	1	4.7	23	5	7.0
1987	396	319	77	19.4	258	61	80.6	9	2	9	2	0	0	5.6	30	11	10.4
1988	386	316	70	18.1	273	59	86.0	4	0	4	0	2	0	2.6	22	11	8.5
1989	428	327	101	23.6	281	88	86.2	5	3	7	4	0	0	4.4	21	3	5.6
Totals	8,275	6,972	1,303	15.7	5,970	1,110	85.6	98	22	100	26	11	2	3.1	467	112	7.0

* The data for 'All races' include recipients whose race/ethnicity is unknown.

TABLE 6-35

COMPUTER/INFORMATION SCIENCES DOCTORATES BY RACE/ETHNICITY, 1975 – 1989
(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1977	25	21	4	16.0	18	4	88.0	0	0	0	0	0	0	0.0	0	0	0.0
1978	90	83	7	7.8	71	6	85.6	0	0	0	0	0	0	0.0	4	0	4.4
1979	175	148	27	15.4	130	23	87.4	1	0	2	0	1	0	2.3	7	2	5.1
1980	169	149	20	11.8	126	17	84.6	0	0	1	0	0	0	0.6	9	0	5.3
1981	188	164	24	12.8	141	21	86.2	1	1	0	0	0	0	1.1	14	2	8.5
1982	155	138	17	11.0	119	17	87.7	1	0	1	0	1	0	1.9	12	0	7.7
1983	207	177	30	14.5	150	24	84.1	1	2	0	0	1	0	1.9	16	4	9.7
1984	195	168	27	13.8	139	24	83.6	2	1	3	0	0	0	3.1	18	2	10.3
1985	213	189	24	11.3	156	21	83.1	3	0	4	2	0	0	4.2	17	0	8.0
1986	249	206	43	17.3	153	40	77.5	1	0	7	0	0	0	3.2	34	3	14.9
1987	275	221	54	19.6	184	45	83.3	1	1	4	0	2	1	3.3	20	6	9.5
1988	325	279	46	14.2	225	40	81.5	2	0	2	0	0	0	1.2	38	6	13.5
1989	392	310	82	20.9	251	66	80.9	0	1	1	3	0	0	1.3	42	10	13.3
Totals	2,658	2,253	405	15.2	1,863	348	83.2	13	6	25	5	5	1	2.1	231	35	10.0

* The data for 'All races' include recipients whose race/ethnicity is unknown.

Note: 'Computer Sciences' introduced in 1977, 'Information Sciences' added in 1983.

SOURCE: Earned Defgrees Conferred, 1971-1989, National Center for Education Statistics -

TABLE 6-36

MATHEMATICAL AND COMPUTER SCIENCES PhDs BY SEX AND SUBFIELD, 1950 – 1989

Year	Math and Computer Sciences				Mathematical/Computer Sciences Fields									
					Mathematics					Computer/Information Sciences				
	Total	Men	Women	%W	No.	Math	Men	Wom	%W	No.	%CS	Men	Wom	%W
1950	160	151	9	5.6	160	100	151	9	5.6					
1951	184	175	9	4.9	184	100	175	9	4.9					
1952	206	195	11	5.3	206	100	195	11	5.3					
1953	241	227	14	5.8	241	100	227	14	5.8					
1954	227	213	14	6.2	227	100	213	14	6.2					
1955	250	239	11	4.4	250	100	239	11	4.4					
1956	235	225	10	4.3	235	100	225	10	4.3					
1957	249	236	13	5.2	249	100	236	13	5.2					
1958	247	232	15	6.1	247	100	232	15	6.1					
1959	282	267	15	5.3	282	100	267	15	5.3					
1960	303	285	18	5.9	303	100	285	18	5.9					
1961	344	327	17	4.9	344	100	327	17	4.9					
1962	396	372	24	6.1	396	100	372	24	6.1					
1963	490	454	36	7.3	490	100	454	36	7.3					
1964	596	567	29	4.9	596	100	567	29	4.9					
1965	688	628	60	8.7	682	99	623	59	8.7	6	1	5	1	16.7
1966	801	744	57	7.1	782	98	725	57	7.3	19	2	19	0	0.0
1967	870	810	60	6.9	832	96	773	59	7.1	38	4	37	1	2.6
1968	983	931	52	5.3	947	96	895	52	5.5	36	4	36	0	0.0
1969	1,161	1,091	70	6.0	1,097	94	1029	68	6.2	64	6	62	2	3.1
1970	1,343	1,245	98	7.3	1,236	92	1140	96	7.8	107	8	105	2	1.9
1971	1,327	1,231	96	7.2	1,199	90	1106	93	7.8	128	10	125	3	2.3
1972	1,295	1,194	101	7.8	1,128	87	1039	89	7.9	167	13	155	12	7.2
1973	1,264	1,147	117	9.3	1,068	84	966	102	9.6	196	16	181	15	7.7
1974	1,229	1,120	109	8.9	1,031	84	931	100	9.7	198	16	189	9	4.5
1975	1,188	1,064	124	10.4	975	82	865	110	11.3	213	18	199	14	6.6
1976	1,100	983	117	10.6	856	78	762	94	11.0	244	22	221	23	9.4
1977	1,039	911	128	12.3	823	79	714	109	13.2	216	21	197	19	8.8
1978	1,001	862	139	13.9	805	80	681	124	15.4	196	20	181	15	7.7
1979	966	814	152	15.7	730	76	608	122	16.7	236	24	206	30	12.7
1980	964	837	127	13.2	724	75	624	100	13.8	240	25	213	27	11.3
1981	980	841	139	14.2	728	74	614	114	15.7	252	26	227	25	9.9
1982	932	817	115	12.3	681	73	587	94	13.8	251	27	230	21	8.4
1983	960	810	150	15.6	698	73	582	116	16.6	262	27	228	34	13.0
1984	946	794	152	16.1	695	73	569	126	18.1	251	27	225	26	10.4
1985	947	813	134	14.1	699	74	590	109	15.6	248	26	223	25	10.1
1986	1,086	917	169	15.6	742	68	618	124	16.7	344	32	299	45	13.1
1987	1,099	921	178	16.2	725	66	599	126	17.4	374	34	322	52	13.9
1988	1,180	1,006	174	14.7	752	64	626	126	16.8	428	36	380	48	11.2
1989	1,420	1,168	252	17.7	882	62	711	171	19.4	538	38	457	81	15.1
50-59	2,281	2,160	121	5.3	2,281	100	2,160	121	5.3					
60-69	6,632	6,209	423	6.4	6,469	98	6,050	419	6.5	163	2	159	4	2.5
70-79	11,752	10,571	1,181	10.0	9,851	84	8,812	1,039	10.5	1,901	16	1,759	142	7.5
80-89	10,514	8,924	1,590	15.1	7,326	70	6,120	1,206	16.5	3,188	297	2,804	384	12.0
TOTAL	31,179	27,864	3,315	10.6	25,927	83	23,142	2,785	10.7	5,252	17	4,722	530	10.1

FIELD: Mathematical and Computer Sciences

SOURCE: Earned Degrees Conferred Series, 1950–89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-37

MASTERS DEGREES IN THE MATHEMATICAL AND COMPUTER SCIENCES BY SUBFIELD AND SEX, 1950 – 1989

	TOTAL Math/Comp Sciences				Mathematics					Computer Sciences				
Year	No.	Men	Women	%W	No.	%Math	Men	Women	%W	No.	%CS	Men	Women	%W
1950	974	784	190	19.5	974	100	784	190	19.5					
1951	1109	929	180	16.2	1109	100	929	180	16.2					
1952	802	663	139	17.3	802	100	663	139	17.3					
1953	677	565	112	16.5	677	100	565	112	16.5					
1954	706	579	127	18.0	706	100	579	127	18.0					
1955	761	613	148	19.4	761	100	613	148	19.4					
1956	898	719	179	19.9	898	100	719	179	19.9					
1957	965	777	188	19.5	965	100	777	188	19.5					
1958	1234	994	240	19.4	1234	100	994	240	19.4					
1959	1499	1188	311	20.7	1499	100	1188	311	20.7					
1960	1765	1428	337	19.1	1765	100	1428	337	19.1					
1961	2238	1772	466	20.8	2238	100	1772	466	20.8					
1962	2680	2179	501	18.7	2680	100	2179	501	18.7					
1963	3323	2665	658	19.8	3323	100	2665	658	19.8					
1964	3603	2914	689	19.1	3603	100	2914	689	19.1					
1965	4294	3482	812	18.9	4148	97	3342	806	19.4	146	3	140	6	4.1
1966	5010	3992	1018	20.3	4772	95	3771	1001	21.0	238	5	221	17	7.1
1967	5733	4423	1310	22.9	5284	92	4000	1284	24.3	449	8	423	26	5.8
1968	6081	4720	1361	22.4	5533	91	4202	1331	24.1	548	9	518	30	5.5
1969	6735	5169	1566	23.3	5723	85	4230	1493	26.1	1012	15	939	73	7.2
1970	7107	5298	1809	25.5	5648	79	3974	1674	29.6	1459	21	1324	135	9.3
1971	6789	5101	1688	24.9	5201	77	3677	1524	29.3	1588	23	1424	164	10.3
1972	7186	5409	1777	24.7	5209	72	3657	1552	29.8	1977	28	1752	225	11.4
1973	7146	5416	1730	24.2	5033	70	3528	1505	29.9	2113	30	1888	225	10.6
1974	7116	5323	1793	25.2	4840	68	3340	1500	31.0	2276	32	1983	293	12.9
1975	6637	4871	1766	26.6	4338	65	2910	1428	32.9	2299	35	1961	338	14.7
1976	6466	4776	1690	26.1	3863	60	2550	1313	34.0	2603	40	2226	377	14.5
1977	6496	4730	1766	27.2	3698	57	2398	1300	35.2	2798	43	2332	466	16.7
1978	6421	4704	1717	26.7	3383	53	2233	1150	34.0	3038	47	2471	567	18.7
1979	6101	4469	1632	26.7	3046	50	1989	1057	34.7	3055	50	2480	575	18.8
1980	6515	4715	1800	27.6	2868	44	1832	1036	36.1	3647	56	2883	764	20.9
1981	6787	4939	1848	27.2	2,569	38	1,692	877	34.1	4218	62	3247	971	23.0
1982	7666	5446	2220	29.0	2,731	36	1,821	910	33.2	4935	64	3625	1310	26.5
1983	8160	5672	2488	30.5	2,839	35	1,859	980	34.5	5321	65	3813	1508	28.3
1984	8939	6174	2765	30.9	2,749	31	1,795	954	34.7	6190	69	4379	1811	29.3
1985	9989	6941	3048	30.5	2,888	29	1,877	1,011	35.0	7101	71	5064	2037	28.7
1986	11241	7713	3528	31.4	3,171	28	2,055	1,116	35.2	8070	72	5658	2412	29.9
1987	11808	8011	3797	32.2	3,327	28	2,026	1,301	39.1	8481	72	5985	2496	29.4
1988	12600	8759	3841	30.5	3,434	27	2,057	1,377	40.1	9166	73	6702	2464	26.9
1989	12816	8827	3989	31.1	3,424	27	2,058	1,366	39.9	9392	73	6769	2623	27.9
50-59	9,625	7,811	1,814	18.8	9,625	100	7,811	1,814	18.8					
60-69	41,462	32,744	8,718	21.0	39,069	94	30,503	8,566	21.9	2,393	6	2,241	152	6.4
70-79	67,465	50,097	17,368	25.7	44,259	66	30,256	14,003	31.6	23,206	34	19,841	3,365	14.5
80-89	96,521	67,197	29,324	30.4	30,000	31	19,072	10,928	36.4	66,521	69	48,125	18,396	27.7
TOTAL	215,073	157,849	57,224	26.6	122,953	57	87,642	35,311	28.7	92,120	43	70,207	21,913	23.8

FIELD: Mathematical and Computer Sciences

SOURCE: Earned Degrees Conferred Series, 1950–89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-38

BACHELORS DEGREES IN THE MATHEMATICAL AND COMPUTER SCIENCES BY SUBFIELD AND SEX, 1950 – 1989

					Mathematics					Computer Sciences				
Year	No.	Men	Women	%W	No.	%Math	Men	Women	%W	No.	%CS	Men	Women	%W
1950	6392	4946	1446	22.6	6392	100	4946	1446	22.6					
1951	5753	4311	1442	25.1	5753	100	4311	1442	25.1					
1952	4721	3389	1332	28.2	4721	100	3389	1332	28.2					
1953	4396	3122	1274	29.0	4396	100	3122	1274	29.0					
1954	4090	2722	1368	33.4	4090	100	2722	1368	33.4					
1955	4034	2724	1310	32.5	4034	100	2724	1310	32.5					
1956	4660	3137	1523	32.7	4660	100	3137	1523	32.7					
1957	5548	3828	1720	31.0	5548	100	3828	1720	31.0					
1958	6924	4953	1971	28.5	6924	100	4953	1971	28.5					
1959	9019	6504	2515	27.9	9019	100	6504	2515	27.9					
1960	11437	8312	3125	27.3	11437	100	8312	3125	27.3					
1961	13127	9483	3644	27.8	13127	100	9483	3644	27.8					
1962	14610	10355	4255	29.1	14610	100	10355	4255	29.1					
1963	16121	11163	4958	30.8	16121	100	11163	4958	30.8					
1964	18677	12682	5995	32.1	18677	100	12682	5995	32.1					
1965	19668	13215	6453	32.8	19581	100	13132	6449	32.9	87	0.4	83	4	4.6
1966	20182	13480	6702	33.2	20093	100	13404	6689	33.3	89	0.4	76	13	7.7
1967	21530	14196	7334	34.1	21308	99	13998	7310	34.3	222	1.0	198	24	10.8
1968	24084	15243	8841	36.7	23625	98	14839	8786	37.2	459	1.9	404	55	12.0
1969	28263	17915	10348	36.6	27330	97	17103	10227	37.4	933	3.3	812	121	13.0
1970	29109	18593	10516	36.1	27565	95	17248	10317	37.4	1544	5.3	1345	199	12.9
1971	27306	17488	9818	36.0	24918	91	15424	9494	38.1	2388	8.7	2064	324	13.6
1972	27250	17466	9784	35.9	23848	88	14525	9323	39.1	3402	12.5	2941	461	13.6
1973	27528	17543	9985	36.3	23223	84	13878	9345	40.2	4305	15.6	3665	640	14.9
1974	26570	16351	9719	36.6	21813	82	12874	8939	41.0	4757	17.9	3977	780	16.4
1975	23385	14729	8656	37.0	18346	78	10646	7700	42.0	5039	21.5	4083	956	19.0
1976	21749	14071	7678	35.3	16085	74	9531	6554	40.7	5664	26.0	4540	1124	19.8
1977	20729	13241	7488	36.1	14303	69	8354	5949	41.6	6426	31.0	4887	1539	23.9
1978	19925	12815	7110	35.7	12701	64	7455	5246	41.3	7224	36.3	5360	1864	25.8
1979	20670	13249	7421	35.9	11901	58	6943	4958	41.7	8769	42.4	6306	2463	28.1
1980	22686	14439	8247	36.4	11473	51	6625	4848	42.3	11213	49.4	7814	3399	30.3
1981	26406	16,672	9734	36.9	11173	42	6,392	4,781	42.8	15,233	57.7	10,280	4,953	32.5
1982	32139	19,966	12173	37.9	11708	36	6,650	5,058	43.2	20,431	63.6	13,316	7,115	34.8
1983	37239	22,749	14490	38.9	12557	34	7,059	5,498	43.8	24,682	66.3	15,690	8,992	36.3
1984	45777	27,797	17980	39.3	13342	29	7,428	5,914	44.3	32,435	70.9	20,369	12,066	37.1
1985	54388	32,921	21467	39.5	15267	28	8,231	7,036	46.1	39,121	72.0	24,690	14,431	36.8
1986	58563	35,841	22742	38.8	16388	28	8,772	7,616	46.5	42,195	72.0	27,069	15,126	35.7
1987	56442	34,871	21571	38.2	16515	29	8,833	7,682	46.5	39,927	70.7	26,038	13,889	34.8
1988	50877	32,112	18765	36.9	15981	31	8,569	7,412	46.4	34,896	68.6	23,543	11,353	32.5
1989	45874	29,442	16432	35.8	15237	33	8,221	7,016	46.0	30,637	66.8	21,221	9,416	30.7
50–59	56,535	39,634	15,901	28.6	56,535	100	39,634	15,901	28.6					
60–69	187,699	126,044	61,655	32.8	185,909	99	124,471	61,438	33.0	1,790	1.0	1,573	217	12.1
70–79	244,221	156,046	88,175	36.1	194,703	80	116,878	77,825	40.0	49,518	20.3	39,168	10,350	20.9
80–89	430,411	266,810	163,601	38.0	139,641	32	76,780	62,861	45.0	290,770	67.6	190,030	100,740	34.6
TOTAL	917,866	588,534	329,332	35.9	575,788	63	357,763	218,025	37.9	342,078	37.3	230,771	111,307	32.5

FIELD: Statistics

SOURCE: Earned Degrees Conferred, 1955-1989, National Center for Education Statistics

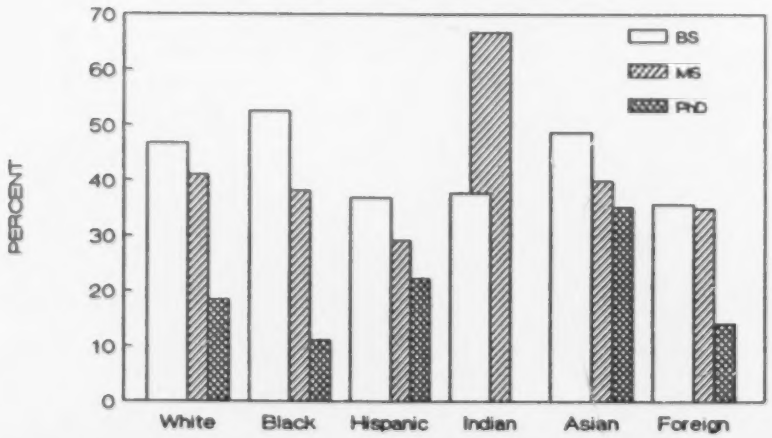
TABLE 6-39

STATISTICS DEGREES BY SEX AND LEVEL OF DEGREE, 1955–56 to 1988–89

	BACHELORS			MASTERS			DOCTORATES		
YEAR	Both Sexes	Women Only	% Women	Both Sexes	Women Only	% Women	Both Sexes	Women Only	% Women
1955-56 thru 1959-60	344	78	22.7	506	56	11.1	170	6	3.5
1960-61 thru 1969-70	2355	377	16.0	3507	513	14.6	965	71	7.4
1970-71	217	55	25.3	495	99	20.0	185	12	6.5
1971-72	168	47	28.0	416	85	20.4	173	12	6.9
1972-73	198	69	34.8	402	91	22.6	156	17	10.9
1973-74	257	94	36.6	453	108	23.8	147	10	6.8
1974-75	213	68	31.9	449	109	24.3	158	16	10.1
1975-76	258	92	35.7	471	111	23.6	141	16	11.3
1976-77	290	126	43.4	473	130	27.5	142	23	16.2
1977-78	273	107	39.2	507	134	26.4	153	32	20.9
1978-79	214	82	38.3	532	152	28.6	142	30	21.1
1979-80	247	104	42.1	495	133	26.9	115	24	20.9
1980-81	226	95	42.0	467	144	30.8	144	22	15.3
1981-82	258	106	41.1	478	145	30.3	125	25	20.0
1982-83	273	133	48.7	459	166	36.2	128	17	13.3
1983-84	298	131	44.0	471	153	32.5	149	23	15.4
1984-85	371	151	40.7	490	165	33.7	137	25	18.2
1985-86	438	195	44.5	478	180	37.7	146	26	17.8
1986-87	463	197	42.5	577	234	40.6	115	30	26.1
1987-88	437	195	44.6	577	240	41.6	140	29	20.7
1988-89	425	179	42.1	640	285	44.5	170	45	26.5
TOTALS	8,223	2,681	32.6	13,343	3,433	25.7	3,901	511	13.1

CHART 6-4

PERCENT WOMEN AMONG MATH SCIENCE GRADUATES, 1987



SOURCE: NCES

Graph by CPST

Source: "Vital Statistics in the Mathematical Sciences...: Fall 1988,", Notices of the American Mathematical Society, May/June 1989 and Nov. 1990

TABLE 6-40

EMPLOYMENT OF NEW PhDs IN MATHEMATICAL SCIENCES BY SEX, 1987 – 1990

Type of Employment	Total			% of Total			Women			% of Women			% Women		
	'87-88	'88-89	'89-90	'87-88	'88-89	'89-90	'87-88	88-89	'89-90	'87-88	'88-89	'89-90	'87-88	'88-89	'89-90
Academic U.S.	460	494	539	53.7	51.5	54.4	81	110	104	52.9	61.5	56.8	17.6	22.3	19.3
University	227	241	259	26.5	25.1	26.1	35	39	44	22.9	21.8	24.0	15.4	16.2	17.0
Group I	87	100	101	10.2	10.4	10.2	11	9	12	7.2	5.0	6.6	12.6	9.0	11.9
Group II	42	47	46	4.9	4.9	4.6	11	10	8	7.2	5.6	4.4	26.2	21.3	17.4
Group III	53	48	63	6.2	5.0	6.4	4	7	11	2.6	3.9	6.0	7.5	14.6	17.5
Group IV	34	32	31	4.0	3.3	3.1	9	9	9	5.9	5.0	4.9	26.5	28.1	29.0
Group V	11	14	18	1.3	1.5	1.8	0	4	4	0.0	2.2	2.2	0.0	28.6	22.2
Masters Inst	77	79	82	9.0	8.2	8.3	14	19	16	9.2	10.6	8.7	18.2	24.1	19.5
Bach. Inst.	71	103	105	8.3	10.7	10.6	14	36	19	9.2	20.1	10.4	19.7	35.0	18.1
2yr Coll or HS	7	8	9	0.8	0.8	0.9	5	4	4	3.3	2.2	2.2	71.4	50.0	44.4
Other Academic	78	63	84	9.1	6.6	8.5	13	12	21	8.5	6.7	11.5	16.7	19.0	25.0
Other U.S.	128	127	139	15.0	13.2	14.0	27	22	21	17.6	12.3	11.5	21.1	17.3	15.1
Research Inst	18	24	32	2.1	2.5	3.2	3	2	3	2.0	1.1	1.6	16.7	8.3	9.4
Government	15	17	17	1.8	1.8	1.7	3	3	2	2.0	1.7	1.1	20.0	17.6	11.8
Bus/Ind	95	86	90	11.1	9.0	9.1	21	17	16	13.7	9.5	8.7	22.1	19.8	17.8
Foreign	223	198	200	26.1	20.6	20.2	37	24	31	24.2	13.4	16.9	16.6	12.1	15.5
Canada	46	32	48	5.4	3.3	4.8	8	4	10	5.2	2.2	5.5	17.4	12.5	20.8
Other Foreign	177	166	152	20.7	17.3	15.3	29	20	21	19.0	11.2	11.5	16.4	12.0	13.8
Not Seeking	6	8	12	0.7	0.8	1.2	2	1	6	1.3	0.6	3.3	33.3	12.5	50.0
Not Yet Empl.	11	60	54	1.3	6.3	5.4	1	14	11	0.7	7.8	6.0	9.1	23.3	20.4
Unknown	28	72	47	3.3	7.5	4.7	5	8	10	3.3	4.5	5.5	17.9	11.1	21.3
TOTAL	856	959	991	100	100	100	153	179	183	100	100	100	17.9	18.7	18.5

SOURCE: Office of Personnel Management; unpublished tabulations

TABLE 6-41

FEDERAL WORKERS EMPLOYED IN ACCOUNTING MATHEMATICS, STATISTICS AND COMPUTER SPECIALITIES BY OCCUPATION TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1990

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	OTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
Accounting	12518	4977	39.8	3254	26.0	1796	55.2	2140	17.1	440	3.5	527	4.2	147	1.2	9264	74.0
Auditing	15317	4559	29.8	2796	18.3	1211	43.3	1572	10.3	458	3.0	710	4.6	56	0.4	12521	81.7
Actuary	171	38	22.2	17	9.9	4	23.5	7	4.1	3	1.8	7	4.1	0	0.0	154	90.1
Operations Research	4091	859	21.0	458	11.2	138	30.1	216	5.3	90	2.2	133	3.3	19	0.5	3633	88.8
Mathematics	2560	718	28.0	360	14.1	136	37.8	178	7.0	74	2.9	96	3.8	12	0.5	2200	85.9
Mathematical Statistician	1254	390	31.1	244	19.5	99	40.6	86	6.9	20	1.6	136	10.8	2	0.2	1010	80.5
Statistician	2781	1017	36.6	480	17.3	269	56.0	310	11.1	56	2.0	99	3.6	15	0.5	2301	82.7
Computer Science	2976	943	31.7	448	15.1	192	42.9	170	5.7	50	1.7	221	7.4	7	0.2	2528	84.9
Computer Specialist	50519	19366	38.3	10090	20.0	5099	50.5	6444	12.8	1438	2.8	1836	3.6	372	0.7	40429	80.0
Computer Operation	9292	4963	53.4	3775	40.6	2245	59.5	2802	30.2	507	5.5	320	3.4	146	1.6	5517	59.4
TOTALS	41668	13501	32.4	8057	19.3	3845	47.7	4679	11.2	1191	2.9	1929	4.6	258	0.6	33611	80.7

SOURCE: Science and Engineering Doctorates: 1960–85, National Science Foundation, 1987; and Doctorate Recipients from United States Universities, Summary Reports, 1972–89, National Research Council

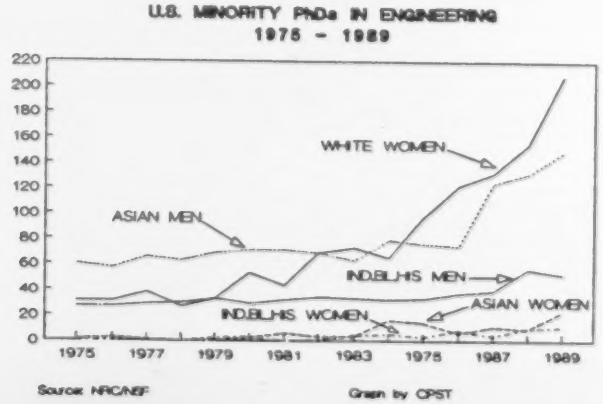
TABLE 7-1

PhD AWARDS IN ENGINEERING BY SUBFIELD AND SEX, 1960 – 1989

Fields	Year of Doctorate														
	1960–69			1970–79			1980–87			1988			1989		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
TOTAL	19070	77	0.4	30338	426	1.4	26769	1451	5.2	4190	286	6.8	4536	373	8.2
Aerospace/Aeronaut/Astro(1)	948	6	0.6	1460	16	1.1	997	27	2.0	150	9	6.0	177	8	4.5
Agricultural	283			546	2	0.4	558	17	2.9	70	3	4.3	102	6	5.9
Bioengineering & Biomed(2)	37			698	13	1.9	615	75	11.1	114	18	15.8	115	26	22.6
Ceramic	296	3	1.0	297	8	2.7	222	16	6.7	30	3	10.0	35	4	11.4
Chemical	2969	17	0.6	3555	52	1.5	3481	268	7.2	625	60	9.6	624	74	11.9
Civil	1924	7	0.4	3078	34	1.1	3082	127	4.2	489	25	5.1	498	45	9.0
Communications(3)							145	4	3.4	24	3	12.5	25	1	4.0
Computer(4)				498	32	6.4	594	40	7.1	99	7	7.1	117	12	10.3
Electrical, Electronics(5)							3682	138	3.6	885	38	4.3	993	54	5.4
Electrical(5)	3941	11	0.3	5777	60	1.0	1359	44	3.2						
Electronics(5)	937	3	0.3	956	10	1.0	230	3	1.3						
Engineering Mechanics	1501	7	0.5	1557	15	1.0	814	35	4.6	106	3	2.8	109	7	6.4
Engineering Physics(6)	780	2	0.3	267	5	1.9	120	5	3.7	9			16		0.0
Engineering Science(3)							176	4	2.7	32	3	9.4	27	3	11.1
Environmental Health Eng(7)	365	2	0.5	667	13	1.9	441	28	6.7	43	5	11.6	42	10	23.8
Industrial	454	4	0.9	959	21	2.2	797	80	9.9	127	19	15.0	161	18	11.2
Materials Science	22	0	0.0	1047	30	2.9	1529	168	10.2	252	25	9.9	257	34	13.2
Mechanical	2291	2	0.1	3409	25	0.7	3390	105	3.2	611	26	4.3	648	22	3.4
Metallurgical(8)	1442	7	0.5	1393	13	0.9	853	53	6.5	92	5	5.4	87	6	6.9
Mining & Mineral(9)	10			81			138	5	3.6	17	1	5.9	33	4	12.1
Naval Arch, Marine Eng(3)							41			9			9	1	11.1
Nuclear (6)	120			1125	18	1.6	962	39	4.2	104	4	3.8	86	7	8.1
Ocean (3)							111	1	0.0	21			20	2	10.0
Operations Research				693	20	2.9	508	56	10.7	44	4	9.1	67	13	19.4
Petroleum (10)				117	3	2.6	207	3	1.6	33	2	6.1	29	1	3.4
Polymer (3)							202	26	13.1	26	3	10.7	58	5	8.6
Systems Eng (11)				357	7	2.0	480	26	5.3	44	7	15.9	31	3	9.7
Engineering, General	124	1	0.8	384	4	1.0	328	21	4.8	49	2	4.1	64	2	3.1
Engineering, Other	626	5	0.8	1407	25	1.8	707	37	4.9	83	11	13.3	106	5	4.7

(1) Originally "Aeronautical engineering", "Astronautical" added in 1966 and "Aerospace" added in 1983. "Biomedical introduced in 1969. "Bioengineering" added in 1983. (3) Introduced in 1983. (4) Introduced in 1975. (5) These two subfields were merged in 1983. (6) In 1961 "Nuclear engineering" was dropped and previous cases added to "Engineering physics." In 1969 "Nuclear engineering" was reinstated. (7) Called "Sanitary and environmental: before 1983. (8) Originally "Metallurgy and metallurgical engineering", the term "Physical was introduced in 1967 and changed to "metallurgical: in 1983. (9) "Mining engineering" dropped in 1961, and renamed "Mining mineral" in 1983. (10) "Fule technology and petroleum engineering" introduced in 1973, renamed "Petroleum" in 1983. (11) Introduced as "Systems design and systems science in 1975, renamed "Systems" in 1983.

CHART 7-1



SOURCE: Science and Engineering Doctorates: 1960-85, National Science Foundation, 1987 and Doctorate Recipients from United States Universities, Summary Reports, 1972-88, National Research Council

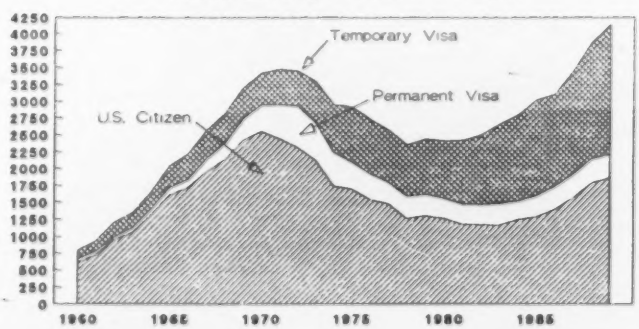
TABLE 7-2

ENGINEERING PhD AWARDS BY CITIZENSHIP AND VISA TYPE, 1960 – 1988

YEAR	TOTAL	U.S. No.	U.S. %	Total No.	Total %	FOREIGN Immigrant No.	FOREIGN Immigrant %	Non-Immigrant No.	Non-Immigrant %	Citizenship Unknown
1960	794	607	76.4	183	23.0	54	6.8	129	16.2	4
1961	940	732	77.9	202	21.5	48	5.1	154	16.4	6
1962	1,216	949	78.0	259	21.3	41	3.4	218	17.9	8
1963	1,357	1,062	78.3	280	20.6	65	4.8	215	15.8	15
1964	1,664	1,313	78.9	331	19.9	84	5.0	247	14.8	20
1965	2,074	1,603	77.3	430	20.7	111	5.4	319	15.4	41
1966	2,301	1,718	74.7	501	21.8	116	5.0	385	16.7	82
1967	2,604	1,957	75.2	607	23.3	198	7.6	409	15.7	40
1978	2,848	2,134	74.9	680	23.9	244	8.6	436	15.3	34
1969	3,251	2,416	74.3	780	24.0	320	9.8	460	14.1	55
1970	3,433	2,542	74.0	872	25.4	401	11.7	471	13.7	19
1971	3,500	2,436	69.6	1,032	29.5	513	14.7	519	14.8	32
1972	3,476	2,307	66.4	1,137	32.7	619	17.8	518	14.9	32
1973	3,339	2,126	63.7	1,170	35.0	552	16.5	618	18.5	43
1874	3,121	1,735	55.6	1,208	38.7	507	16.2	701	22.5	178
1975	2,961	1,685	56.9	1,223	41.3	413	13.9	810	27.4	53
1976	2,791	1,532	54.9	1,183	42.4	384	13.8	799	28.6	76
1977	2,641	1,468	55.6	1,098	41.6	325	12.3	773	29.3	75
1978	2,423	1,259	52.0	1,092	45.1	325	13.4	767	31.7	72
1979	2,494	1,294	51.9	1,138	45.6	323	12.9	816	32.7	62
1980	2,479	1,255	50.6	1,148	46.3	299	12.0	851	34.3	77
1981	2,528	1,170	46.2	1,241	49.1	301	11.8	942	37.3	119
1982	2,644	1,169	44.1	1,324	50.1	296	11.2	1,030	38.9	155
1983	2,780	1,163	41.5	1,488	53.5	319	11.5	1,170	42.1	138
1984	2,915	1,239	42.5	1,542	52.9	274	9.4	1,269	43.5	134
1985	3,164	1,277	40.4	1,729	54.6	316	10.0	1,419	44.6	158
1986	3,371	1,383	40.8	1,715	50.8	344	10.2	1,372	40.6	284
1987	3,716	1,557	41.8	1,888	50.8	355	9.6	1,532	41.2	275
1988	4,189	1,780	42.5	2,089	49.9	367	8.8	1,722	41.1	323
1989	4,736	1,853	39.1	2,285	48.2	361	7.6	1,924	40.6	794
TOTAL	81,980	46,721	57.0	31,855	38.9	8,875	10.8	22,995	28.0	3,404

CHART 7-2

CITIZENSHIP OF ENGINEERING PhD RECIPIENTS, 1960 - 1989



Source: NSF/NRC

Graph by CPST (30 CITENGPH 7-2)

SOURCE: Earned Degrees Conferred Series, 1950–89, National Center for Education Statistics.

TABLE 7-3

PhD DEGREES IN ENGINEERING BY SEX AND SUBFIELD (1950 – 1989)

Year	Total			Engineering Fields																							
				Aeronautical				Chemical				Civil				Electrical				Industrial				Mechanical				Other			
	Eng	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W
1950	417	1	0.2	23	6	0	0.0	173	41	1	0.6	28	7	0	0.0	80	19	0	0.0					46	11	0	0.0	67	16	0	0.0
1951	520	1	0.2	26	5	1	3.8	171	33	0	0.0	52	10	0	0.0	113	22	0	0.0					67	13	0	0.0	91	18	0	0.0
1952	529	3	0.6	25	5	0	0.0	168	32	0	0.0	45	9	0	0.0	120	23	3	2.5					72	14	0	0.0	99	19	0	0.0
1953	518	1	0.2	32	6	0	0.0	147	28	0	0.0	40	8	0	0.0	132	25	1	0.8					84	16	0	0.0	83	16	0	0.0
1954	594	1	0.2	43	7	0	0.0	133	22	0	0.0	43	7	0	0.0	111	19	0	0.0	6	1	1	16.7	72	12	0	0.0	186	31	0	0.0
1955	599	0	0.0	23	4	0	0.0	139	23	0	0.0	29	5	0	0.0	141	24	0	0.0	9	2	0	0.0	79	13	0	0.0	179	30	0	0.0
1956	610	0	0.0	36	6	0	0.0	136	22	0	0.0	59	10	0	0.0	136	22	0	0.0	10	2	0	0.0	61	10	0	0.0	172	28	0	0.0
1957	596	1	0.2	32	5	0	0.0	146	24	0	0.0	39	7	0	0.0	130	22	0	0.0	17	3	0	0.0	67	11	0	0.0	165	28	1	0.6
1958	647	4	0.6	26	4	1	3.8	127	20	1	0.8	69	11	0	0.0	144	22	1	0.7	9	1	0	0.0	76	12	0	0.0	196	30	1	0.5
1959	714	1	0.1	24	3	0	0.0	143	20	0	0.0	70	10	0	0.0	189	26	0	0.0	12	2	0	0.0	83	12	1	0.0	193	27	0	0.0
1960	786	3	0.4	23	3	1	4.3	170	22	0	0.0	74	9	1	1.4	203	26	1	0.5	13	2	0	0.0	107	14	0	0.0	196	25	0	0.0
1961	943	6	0.6	42	4	1	2.4	171	18	0	0.0	117	12	1	0.9	250	27	1	0.4	19	2	0	0.0	106	11	0	0.0	238	25	3	1.3
1962	1,207	4	0.3	54	4	0	0.0	225	19	1	0.4	145	12	0	0.0	295	24	1	0.3	26	2	1	3.8	159	13	0	0.0	303	25	1	0.3
1963	1,378	11	0.8	70	5	3	4.3	238	17	2	0.8	142	10	2	1.4	386	28	2	0.5	23	2	0	0.0	164	12	0	0.0	355	26	2	0.6
1964	1,693	7	0.4	72	4	1	1.4	262	15	1	0.4	218	13	1	0.5	460	27	2	0.4	32	2	0	0.0	200	12	0	0.0	449	27	2	0.4
1965	2,124	10	0.5	91	4	0	0.0	364	17	2	0.5	252	12	2	0.8	511	24	2	0.4	61	3	1	1.6	265	12	0	0.0	580	27	3	0.5
1966	2,304	9	0.4	105	5	0	0.0	354	15	3	0.8	283	12	1	0.4	569	25	2	0.4	45	2	0	0.0	289	13	0	0.0	659	29	3	0.5
1967	2,614	11	0.4	142	5	0	0.0	305	12	2	0.7	296	11	1	0.3	668	26	0	0.0	64	2	2	3.1	354	14	1	0.0	785	30	5	0.6
1968	2,932	12	0.4	162	6	1	0.6	367	13	3	0.8	376	13	0	0.0	723	25	0	0.0	79	3	2	2.5	395	13	1	0.0	830	28	5	0.6
1969	3,377	12	0.4	207	6	0	0.0	409	12	3	0.7	381	11	0	0.0	862	26	4	0.5	115	3	0	0.0	425	13	0	0.2	978	29	5	0.5
1970	3,681	24	0.7	211	6	2	0.9	438	12	4	0.9	411	11	2	0.5	882	24	3	0.3	126	3	3	2.4	435	12	0	0.0	1,178	32	10	0.8
1971	3,654	23	0.6	217	6	3	1.4	406	11	2	0.5	446	12	3	0.7	879	24	3	0.3	139	4	3	2.2	438	12	0	0.0	1,129	31	9	0.8
1972	3,704	25	0.7	197	5	0	0.0	394	11	1	0.3	415	11	2	0.5	824	22	3	0.4	168	5	0	0.0	411	11	1	0.0	1,295	35	18	1.4
1973	3,560	64	1.8	171	5	1	0.3	397	11	2	0.5	397	11	9	2.3	791	22	9	1.1	130	4	3	2.3	370	10	3	0.0	1,304	37	37	2.8
1974	3,336	55	1.6	173	5	3	1.7	400	12	10	2.5	368	11	4	1.1	705	21	8	1.1	146	4	2	1.4	385	12	6	0.0	1,159	35	22	1.9
1975	3,151	67	2.1	163	5	2	1.2	346	11	4	1.2	356	11	9	2.5	701	22	11	1.6	119	4	5	4.2	340	11	4	0.0	1,126	36	32	2.8
1976	2,835	69	2.4	139	5	2	1.4	308	11	9	2.9	370	13	9	2.4	649	23	14	2.2	121	4	3	2.5	305	11	2	0.0	943	33	30	3.2
1977	2,599	74	2.8	119	5	4	3.4	291	11	8	2.7	309	12	6	1.9	566	22	18	3.2	104	4	5	4.8	283	11	3	0.4	927	36	30	3.2
1978	2,442	57	2.3	115	5	2	1.7	259	11	7	2.7	277	11	6	2.2	503	21	13	2.6	118	5	5	4.2	279	11	5	0.4	891	36	18	2.0
1979	2,517	83	3.3	95	4	0	0.0	304	12	8	2.6	253	10	4	1.6	586	23	14	2.4	149	6	14	9.4	271	11	3	0.0	859	34	40	4.7
1980	2,519	96	3.8	99	4	1	1.0	284	11	15	5.3	270	11	6	2.2	525	21	14	2.7	116	5	7	6.0	281	11	4	0.0	944	37	49	5.2
1981	2,551	104	4.1	109	4	1	0.9	300	12	13	4.3	325	13	9	2.8	535	21	20	3.7	112	4	9	8.0	276	11	7	0.0	894	35	45	5.0
1982	2,621	138	5.3	96	4	1	1.0	311	12	19	6.1	329	13	14	4.3	526	20	21	4.0	116	4	13	11.2	333	13	13	0.3	910	35	57	6.3
1983	2,822	125	4.4	90	3	2	2.2	319	11	21	6.6	340	12	13	3.8	550	19	9	1.6	118	4	11	9.3	299	11	8	1.0	1,106	39	61	5.5
1984	2,979	165	5.5	106	4	2	1.9	330	11	19	5.8	369	12	24	6.5	585	20	14	2.4	119	4	17	14.3	319	11	7	1.9	1,151	39	82	7.1
1985	3,221	207	6.4	110	3	4	3.6	418	13	39	9.3	377	12	21	5.6	660	20	28	4.2	139	4	14	10.1	409	13	24	1.5	1,108	34	77	6.9
1986	3,400	228	6.7	112	3	2	1.8	446	13	50	11.2	395	12	29	7.3	722	21	39	5.4	130	4	19	14.6	426	13	11	0.7	1,169	34	78	6.7
1987	3,809	261	6.9	128	3	10	7.8	497	13	58	11.7	451	12	17	3.8	726	19	35	4.8	165	4	20	12.1	528	14	17	0.8	1,314	34	104	7.9
1988	4,181	293	7.0	141	3	7	5.0	579	14	53	9.2	481	12	26	5.4	860	21	42	4.9	162	4	22	13.6	596	14	25	1.2	1,362	33	118	8.7
1989	4,521	400	8.8	154	3	7	4.5	599	13	79	13.2	503	11	48	9.5	1002	22	66	6.6	203	4	26	12.8	634	14	24	2.1	1,426	32	150	10.5
50–59	5,744	13	0.2	290	5	2	0.7	1,483	26	2	0.1	474	8	0	0.0	1,296	23	5	0.4	63	1	1	1.6	707	12	1	0.0	1,431	25	2	0.1
60–69	19,358	85	0.4	968	5	7	0.7	2,865	15	17	0.6	2,284	12	9	0.4	4,927	25	15	0.3	477	2	6	1.3	2,484	13	2	0.0	5,373	28	29	0.5
70–79	31,479	541	1.7	1,600	5	19	1.2	3,543	11	55	1.6	3,602	11	54	1.5	7,086	23	96	1.4	1,320	4	43	3.3	3,517	11	28	0.0	10,811	34	246	2.3
80–89	32,624	2,017	6.2	1,145	4	37	3.2	4,083	13	366	9.0	3,840	12	207	5.4	6,691	21	288	4.3	1,380	4	158	11.4	4,101	13	140	0.0	11,384	35	821	7.2
TOTAL	89,205	2656	3.0	4,003	4	65	1.6	11,974	13	440	3.7	10,200	11	270	2.6	20,000	22	404	2.0	3,240	4	208	6.4	10,789	12	171	1.6	28,999	33	1098	3.8

SOURCE: Earned Degrees Conferred Series, 1950–89, National Center for Education Statistics

TABLE 7-4

MASTERS DEGREES IN ENGINEERING BY SUBFIELD AND SEX, 1950 – 1989

				Engineering Fields																							
	Total			Aero/Astro				Chemical				Civil				Electrical				Industrial				Mechanical				Other	
Year	Eng	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E
1950	4496	15	0.3	373	8	1	0.3	699	16	1	0.1	689	15	3	0.4	1057	24	2	0.2					784	17	3	0.4	894	20
1951	4825	10	0.2	332	7	1	0.3	740	15	2	0.3	630	13	1	0.2	1114	23	0	0.0					913	19	3	0.3	1096	23
1952	4091	18	0.4	231	6	0	0.0	587	14	5	0.9	583	14	1	0.2	1008	25	3	0.3					660	16	4	0.6	1022	25
1953	3566	13	0.4	210	6	1	0.5	431	12	2	0.5	566	16	1	0.2	880	25	1	0.1					667	19	0	0.0	812	23
1954	4204	15	0.4	219	5	1	0.5	448	11	2	0.4	565	13	3	0.5	978	23	1	0.1	375	9	2	0.5	723	17	0	0.0	896	21
1955	4484	13	0.3	204	5	2	1.0	470	10	1	0.2	693	15	3	0.4	1074	24	2	0.2	373	8	1	0.3	759	17	1	0.1	911	20
1956	4724	19	0.4	216	5	3	1.4	545	12	3	0.6	822	17	1	0.1	1161	25	3	0.3	354	7	0	0.0	765	16	2	0.3	861	18
1957	5233	16	0.3	256	5	2	0.8	402	8	1	0.2	850	16	4	0.5	1312	25	2	0.2	395	8	1	0.3	812	16	3	0.4	1206	23
1958	5788	20	0.3	301	5	1	0.3	561	10	4	0.7	810	14	1	0.1	1570	27	5	0.3	486	8	1	0.2	952	16	0	0.0	1108	19
1959	6753	24	0.4	331	5	1	0.3	596	9	3	0.5	926	14	5	0.5	1846	27	6	0.3	578	9	0	0.0	1081	16	1	0.1	1395	21
1960	7159	26	0.4	342	5	0	0.0	617	9	6	1.0	1052	15	1	0.1	1993	28	4	0.2	468	7	1	0.2	1179	16	4	0.3	1508	21
1961	8178	28	0.3	437	5	3	0.7	650	8	2	0.3	1247	15	1	0.1	2414	30	4	0.2	458	6	0	0.0	1401	17	5	0.4	1571	19
1962	8909	40	0.4	469	5	3	0.6	676	8	7	1.0	1286	14	9	0.7	2701	30	10	0.4	508	6	0	0.0	1531	17	2	0.1	1738	20
1963	9635	32	0.3	575	6	4	0.7	711	7	2	0.3	1410	15	4	0.3	2816	29	9	0.3	603	6	0	0.0	1664	17	0	0.0	1856	19
1964	10827	34	0.3	65[illegible]	6	3	0.5	762	7	5	0.7	1567	14	6	0.4	3163	29	6	0.2	808	7	1	0.1	1886	17	3	0.2	1983	18
1965	12056	44	0.4	6[illegible]	6	6	0.9	806	7	3	0.4	1686	14	5	0.3	3505	29	7	0.2	1013	8	3	0.3	2036	17	5	0.2	2311	19
1966	13678	76	0.6	79[illegible]	6	6	0.8	994	7	7	0.7	2007	15	7	0.3	3872	28	22	0.6	1200	9	6	0.5	2154	16	7	0.3	2653	19
1967	13885	78	0.6	80[illegible]	6	2	0.2	949	7	7	0.7	2019	15	18	0.9	3953	28	11	0.3	1341	10	10	0.7	2176	16	7	0.3	2645	19
1968	15188	99	0.7	841	6	6	0.7	1156	8	14	1.2	2137	14	14	0.7	4226	28	22	0.5	1512	10	9	0.6	2136	14	6	0.3	3180	21
1969	15243	113	0.7	835	5	7	0.8	1136	7	9	0.8	2201	14	12	0.5	4033	26	22	0.5	1453	10	8	0.6	2298	15	4	0.2	3287	22
1970	15597	172	1.1	749	5	3	0.4	1045	7	17	1.6	2242	14	19	0.8	4138	27	29	0.7	1763	11	17	1.0	2298	15	12	0.5	3362	22
1971	16347	187	1.1	717	4	6	0.8	1100	7	26	2.4	2431	15	28	1.2	4282	26	30	0.7	1921	12	23	1.2	2238	14	5	0.2	3658	22
1972	16802	281	1.7	687	4	7	1.0	1154	7	28	2.4	2487	15	38	1.5	4209	25	52	1.2	1731	10	25	1.4	2283	14	18	0.8	4251	25
1973	16758	288	1.7	563	3	2	0.4	1051	6	21	2.0	2629	16	38	1.4	3899	23	49	1.3	1595	10	29	1.8	2142	13	19	0.9	4879	29
1974	15393	362	2.4	557	4	9	1.6	1045	7	31	3.0	2653	17	49	1.8	3499	23	55	1.6	1734	11	45	2.6	1844	12	21	1.1	4061	26
1975	15434	396	2.6	477	3	7	1.5	990	6	25	2.5	2771	18	74	2.7	3471	22	58	1.7	1687	11	56	3.3	1860	12	15	0.8	4178	27
1976	16170	589	3.6	479	3	10	2.1	1031	6	29	2.8	3000	19	99	3.3	3774	23	104	2.8	1751	11	81	4.6	1907	12	27	1.4	4228	26
1977	16889	733	4.3	385	2	8	2.1	1086	6	65	6.0	2969	18	129	4.3	3788	22	134	3.5	1609	10	75	4.7	1953	12	49	2.5	5099	30
1978	17015	871	5.1	411	2	11	2.7	1237	7	87	7.0	2691	16	132	4.9	3742	22	143	3.8	1722	10	138	8.0	1943	11	57	2.9	5269	31
1979	16193	990	6.1	372	2	17	4.6	1149	7	114	9.9	2655	16	143	5.4	3596	22	143	4.0	1502	9	128	8.5	1878	12	67	3.6	5041	31
1980	16846	1190	7.1	382	2	9	2.4	1271	8	133	10.5	2683	16	197	7.3	3842	23	184	4.8	1313	8	133	10.1	2060	12	98	4.8	5295	31
1981	16388	1323	8.1	408	2	20	4.9	1267	8	163	12.9	2891	18	207	7.2	3901	24	221	5.7	1631	10	166	10.2	2291	14	116	5.1	3997	24
1982	17526	1573	9.0	521	3	39	7.5	1285	7	181	14.1	2995	17	270	9.0	4462	25	288	6.5	1656	9	210	12.7	2399	14	139	5.8	4208	24
1983	18830	1746	9.3	491	3	37	7.5	1368	7	164	12.0	3074	16	294	9.6	4531	24	293	6.5	1432	8	206	14.4	2511	13	149	5.9	5423	29
1984	20094	2096	10.4	562	3	27	4.8	1514	8	194	12.8	3146	16	326	10.4	5078	25	385	7.6	1557	8	278	17.9	2797	14	184	6.6	5440	27
1985	20926	2242	10.7	605	3	31	5.1	1544	7	278	18.0	3172	15	337	10.6	5153	25	434	8.4	1462	7	227	15.5	3053	15	204	6.7	5937	28
1986	21661	2493	11.5	621	3	43	6.9	1361	6	214	15.7	2926	14	300	10.3	5534	26	556	10.0	1653	8	279	16.9	3075	14	237	7.7	6491	30
1987	22081	2769	12.5	718	3	55	7.7	1184	5	223	18.8	2901	13	379	13.1	6234	28	599	9.6	1726	8	319	18.5	3157	14	227	7.2	6161	28
1988	22693	2806	12.4	797	4	63	7.9	1103	5	179	16.2	2839	13	326	11.5	6692	29	713	10.7	1815	8	324	17.9	3330	15	279	8.4	6117	27
1989	23713	3080	13.0	855	4	64	7.5	1097	5	212	19.3	2902	12	366	12.6	7024	30	790	11.2	1823	8	358	19.6	3517	15	303	8.6	6495	27
50–59	48164	163	0.3	2673	6	13	0.5	5479	11	24	0.4	7134	15	23	0.3	12000	25	25	0.2	2561	5	5	0.2	8116	17	17	0.2	10201	21
60–69	114758	570	0.5	6456	6	40	0.6	8457	7	62	0.7	16612	14	77	0.5	32676	28	117	0.4	9364	8	38	0.4	18461	16	43	0.2	22732	20
70–79	162598	4869	3.0	5397	3	80	1.5	10888	7	443	4.1	26528	16	749	2.8	38398	24	797	2.1	17015	10	617	3.6	20348	13	290	1.4	44026	27
80–89	200,756	21,318	10.6	5,960	3	388	6.5	12,994	6	1,941	14.9	29,529	15	3,002	10.2	52,451	26	4,463	8.5	16,068	8	2,500	15.6	28,190	14	1,936	6.9	55,564	28
TOTAL	526,270	26,920	5.1	20,486	4	521	2.5	37,818	7	2,470	6.5	79,803	15	3,851	4.8	135,525	26	5,402	4.0	45,008	9	3,160	7.0	75,113	14	2,286	3.0	132,523	25

SOURCE: Earned Degrees Conferred Series, 1969–89, National Center for Education Statistics

TABLE 7-5
BACHELORS DEGREES IN ENGINEERING BY SUBFIELD & SEX, 1950 –1989

Year	Total			Engineering Fields																									
				Aero/Astro				Chemical				Civil				Electrical				Industrial				Mechanical				Other	
	Eng	Women	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E
1950	52246	175	0.3	1712	3	14	0.8	4506	9	32	0.7	7781	15	20	0.3	13270	25	39	0.3					14441	28	27	0.2	10536	20
1951	41473	87	0.2	1481	4	9	0.6	3707	9	20	0.5	7050	17	7	0.1	9488	23	11	0.1					10798	26	15	0.1	8949	22
1952	30549	60	0.2	911	3	11	1.2	2857	9	8	0.3	5329	17	7	0.1	6453	21	7	0.1					7685	25	8	0.1	7314	24
1953	24189	37	0.2	738	3	4	0.5	2258	9	5	0.2	4396	18	7	0.2	4899	20	7	0.1					5964	25	5	0.1	5934	25
1954	22329	65	0.3	660	3	1	0.2	2042	9	9	0.4	3955	18	7	0.2	4578	21	13	0.3	1342	6	4	0.3	5419	24	9	0.2	4333	19
1955	22589	62	0.3	686	3	3	0.4	2027	9	13	0.6	3868	17	8	0.2	4860	22	13	0.3	1448	6	4	0.3	5876	26	9	0.2	3824	17
1956	26312	76	0.3	895	3	2	0.2	2466	9	22	0.9	4227	16	11	0.3	6228	24	11	0.2	1651	6	5	0.3	6728	26	11	0.2	4117	16
1957	31211	81	0.3	1109	4	5	0.5	2818	9	22	0.8	4683	15	9	0.2	8108	26	11	0.1	1926	6	7	0.4	7907	25	15	0.2	4660	15
1958	35332	109	0.3	1337	4	7	0.5	3008	9	22	0.7	5134	15	13	0.3	9567	27	19	0.2	2108	6	3	0.1	9060	26	19	0.2	5118	14
1959	38134	121	0.3	1551	4	6	0.4	3131	8	20	0.6	5394	14	19	0.4	10786	28	30	0.3	2297	6	6	0.3	9592	25	12	0.1	5383	14
1960	37808	145	0.4	1698	4	6	0.4	2966	8	31	1.0	5303	14	15	0.3	10631	28	32	0.3	2242	6	10	0.4	9597	25	20	0.2	5371	14
1961	35866	134	0.4	1666	5	5	0.3	2864	8	19	0.7	5385	15	25	0.5	10200	28	25	0.2	2084	6	7	0.3	8651	24	22	0.3	5016	14
1962	34735	125	0.4	1440	4	5	0.3	2677	8	20	0.7	5235	15	23	0.4	10263	30	34	0.3	1904	5	8	0.4	8473	24	13	0.2	4743	14
1963	33458	130	0.4	1292	4	4	0.3	2724	8	26	1.0	4854	15	18	0.4	10393	31	31	0.3	1861	6	10	0.5	7697	23	23	0.3	4637	14
1964	35226	159	0.5	1455	4	7	0.5	2998	9	28	0.9	5077	14	24	0.5	11261	32	33	0.3	2194	6	8	0.4	7697	22	17	0.2	4544	13
1965	36795	139	0.4	1717	5	8	0.5	3076	8	26	0.8	5200	14	13	0.3	11730	32	37	0.3	2236	6	6	0.3	8035	22	16	0.2	4801	13
1966	35815	146	0.4	1683	5	5	0.3	2,981	8	23	0.8	5,611	16	23	0.4	10598	30	29	0.3	2335	7	10	0.4	7,811	22	19	0.2	4796	13
1967	36186	184	0.5	1914	5	14	0.7	2,997	8	28	0.9	5,439	15	28	0.5	10421	29	42	0.4	2366	7	9	0.4	7,890	22	20	0.3	5159	14
1968	37614	211	0.6	2072	6	12	0.6	3,395	9	30	0.9	5,796	15	31	0.5	10253	27	43	0.4	2727	7	15	0.6	7,930	21	32	0.4	5441	14
1969	41553	313	0.8	2625	6	19	0.7	3,768	9	53	1.4	6,282	15	47	0.7	11203	27	66	0.6	3000	7	16	0.5	8,514	20	40	0.5	6161	15
1970	44772	338	0.8	2756	6	20	0.7	3,995	9	57	1.4	6,800	15	53	0.8	11737	26	68	0.6	3199	7	21	0.7	9,310	21	39	0.4	6975	16
1971	45387	365	0.8	2443	5	17	0.7	3,907	9	64	1.6	6,939	15	60	0.9	11410	25	78	0.7	3210	7	20	0.6	9,177	20	43	0.5	8301	18
1972	46003	501	1.1	2180	5	20	0.9	3,967	9	80	2.0	7,258	16	77	1.1	11318	25	82	0.7	3713	8	40	1.1	8,784	19	49	0.6	8783	19
1973	46989	580	1.2	1738	4	18	1.0	3,968	8	94	2.4	8,013	17	89	1.1	11323	24	158	1.4	3508	7	31	0.9	8,795	19	63	0.7	9644	21
1974	43530	706	1.6	1210	3	18	1.5	3,826	9	120	3.1	8,633	20	145	1.7	10413	24	117	1.1	2921	7	44	1.5	7,883	18	66	0.8	8644	20
1975	40065	860	2.1	1174	3	24	2.0	3,420	9	147	4.3	8,289	21	173	2.1	9329	23	130	1.4	2583	6	59	2.3	7,089	18	84	1.2	8181	20
1976	39114	1443	3.7	1009	3	29	2.9	3,543	9	289	8.2	8,493	22	279	3.3	8957	23	193	2.2	2241	6	87	3.9	6,984	18	150	2.1	7887	20
1977	41581	2086	5.0	1078	3	28	2.6	3,986	10	452	11.3	8,898	21	485	5.5	8935	21	268	3.0	2264	5	149	6.6	7,927	19	242	3.1	8493	20
1978	47411	3497	7.4	1186	3	61	5.1	5,205	11	752	14.4	9,900	21	759	7.7	9812	21	435	4.4	2712	6	323	11.9	9,100	19	472	5.2	9496	20
1979	53720	4919	9.2	1386	3	66	4.8	6,442	12	1,055	16.4	10,583	20	1,049	9.9	10822	20	659	6.1	2804	5	428	15.3	10,360	19	620	6.0	11323	21
1980	59240	6014	10.2	1424	2	82	5.8	7,276	12	1,287	17.7	11,046	19	1,087	9.8	12248	21	893	7.3	3217	5	545	16.9	12,020	20	893	7.4	12009	20
1981	64,068	7,117	11.1	1809	3	129	7.1	7,639	12	1,365	17.9	11,331	18	1,231	10.9	15,040	23	1,151	7.7	3833	6	756	19.7	13,573	21	1,151	8.5	12173	19
1982	67,791	8,337	12.3	2120	3	171	8.1	8,059	12	1,612	20.0	11,280	17	1,318	11.7	16,553	24	1,266	7.6	3992	6	943	23.6	14,315	21	1,266	8.8	13268	20
1983	72,954	9,719	13.3	2127	3	172	8.1	8,550	12	1,789	20.9	10,747	15	1,484	13.8	19,205	26	1,485	7.7	3748	5	981	26.2	16,031	22	1,485	9.3	15475	21
1984	76,531	10,833	14.2	2534	3	175	6.9	9,192	12	2,077	22.6	10,351	14	1,423	13.7	21,541	28	1,812	8.4	3937	5	1054	26.8	17,040	22	1,812	10.6	15521	20
1985	77,871	11,316	14.5	2854	4	241	8.4	8,941	11	2,093	23.4	9,730	12	1,342	13.8	23,668	30	1,801	7.5	3914	5	1148	29.3	17,200	22	1,801	10.5	11564	15
1986	77,061	11,203	14.5	2902	4	248	8.5	7,411	10	1,606	21.7	9,223	12	1,229	13.3	26,112	34	1,710	6.5	4162	5	1260	30.3	16,586	22	1,710	10.3	10665	14
1987	74,705	11,473	15.4	2989	4	248	8.3	6,114	8	1,540	25.2	8,746	12	1,196	13.7	26,791	36	1,727	6.4	4140	6	1323	32.0	15,723	21	1,727	11.0	10202	14.
1988	69,505	10,647	15.3	3902	6	298	7.6	3,926	6	1,058	26.9	7,497	11	1,964	26.2	23,598	34	3,172	13.4	4082	6	1196	29.3	14,918	21	1,711	11.5	11582	17
1989	66,296	10,062	15.2	2944	4	301	10.2	3,684	6	1,103	29.9	7,316	11	1,038	14.2	21,909	33	2,831	12.9	3973	6	1209	30.4	13,883	21	11,654	83.9	12587	19
50–59	324,384	873	0.3	11,080	3	62	0.6	28,820	9	173	0.6	51,817	16	108	0.2	78,237	24	161	0.2	10,772	3	29	0.3	83,470	26	130	0.2	60,168	19
60–69	365,056	1,666	0.5	17,562	5	85	0.5	30,446	8	284	0.9	54,162	15	247	0.5	106,963	29	372	0.3	22,949	6	99	0.4	82,295	23	222	0.3	50,669	14
70–79	448,572	15,295	3.4	16,160	4	301	1.9	42,259	9	3,110	7.4	83,606	19	3,169	3.8	104,056	23	2,188	2.1	29,155	6	1,202	4.1	85,409	19	1,828	2.1	87,727	20
80–89	706,022	96,721	13.7	26,605	4	2,065	8.1	70,792	10	15,530	21.9	97,267	14	13,312	13.7	206,665	29	17,848	8.6	38,998	6	10,415	26.7	151,289	21	25,210	16.7	125,046	18
TOTAL	1,844,014	114,575	6.2	70,407	4	2,513	3.6	172,317	9	19,097	11.1	267,072	16	16,836	5.9	496,911	27	20,569	4.1	101,874	6	11,745	11.5	402,463	22	27,390	6.8	323,610	18

SOURCE: Engineering and Technology Degrees, 1969 through 1990; Engineering Manpower Commission

TABLE 7-6

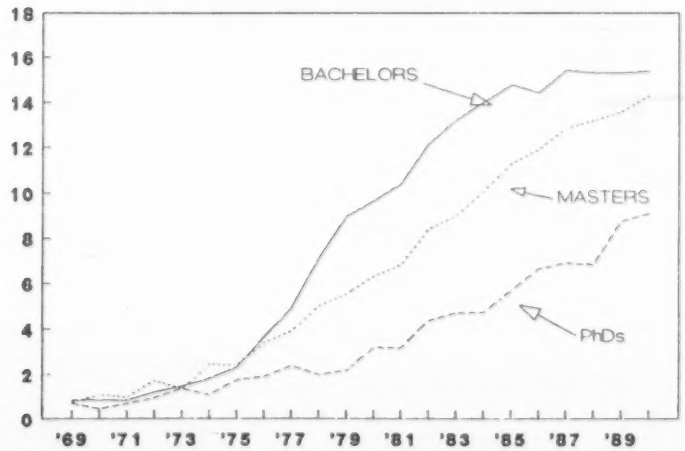
ENGINEERING DEGREES GRANTED TO WOMEN BY DEGREE LEVEL, 1969 - 1990

	BACHELORS			MASTERS+			PhDs		
YEAR	Total	Women	% W	Total	Women	% W	Total	Women	% W
1969*	39,972	328	0.8	14,980	107	0.7	3,387	23	0.7
1970*	42,966	358	0.8	15,548	170	1.1	3,620	16	0.4
1971*	43,167	353	0.8	16,383	158	1.0	3,640	25	0.7
1972	44,190	525	1.2	17,356	299	1.7	3,774	35	0.9
1973	43,429	624	1.4	17,152	226	1.3	3,587	48	1.3
1974	41,407	744	1.8	15,885	393	2.5	3,362	36	1.1
1975	38,210	878	2.3	15,773	380	2.4	3,039	53	1.7
1976	37,970	1,376	3.6	16,506	557	3.4	2,977	56	1.9
1977	40,095	1,961	4.9	16,551	646	3.9	2,814	67	2.4
1978	46,095	3,280	7.1	16,182	814	5.0	2,573	51	2.0
1979	52,598	4,716	9.0	15,624	866	5.5	2,815	61	2.2
1980	58,742	5,680	9.7	17,243	1,092	6.3	2,751	88	3.2
1981	62,935	6,545	10.4	17,914	1,225	6.8	2,841	90	3.2
1982	66,990	8,140	12.2	18,289	1,539	8.4	2,887	126	4.4
1983	72,471	9,566	13.2	19,909	1,796	9.0	3,023	142	4.7
1984	76,931	10,761	14.0	21,226	2,146	10.1	3,234	153	4.7
1985	77,892	11,516	14.8	22,502	2,538	11.3	3,382	192	5.7
1986	78,178	11,264	14.4	23,025	2,745	11.9	3,686	246	6.7
1987	75,735	11,675	15.4	24,290	3,119	12.8	4,275	296	6.9
1988	71,386	10,940	15.3	25,616	3,378	13.2	4,571	313	6.8
1989	68,824	10,529	15.3	26,412	3,585	13.6	5,017	440	8.8
1990	65,967	10,130	15.4	27,034	3,866	14.3	5,424	495	9.1
TOTAL	1,246,150	121,889	9.8	421,400	31,645	7.5	76,679	3,052	4.0

* Totals for women in these years include only numbers actually reported. The totals would be higher if all institutions had reported all categories. From 1971-72 through 1984-85, estimates are included for schools that did not report. Beginning in 1985-86, no extimates were added for for the few missing schools. + Includes Engineer Degrees.

CHART 7-3

PERCENT WOMEN AMONG ENGINEERING GRADUATES BY LEVEL, 1969-90



Source EMC Graph by CPST

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1985 through 1990, Engineering Manpower Commission

TABLE 7-7

ENGINEERING DEGREES BY LEVEL, SEX, RACE & CITIZENSHIP, 1985 – 1990

BACHELORS

Year	Total	Women	%W	Black	%B	Hispanic Total+	%H	U. of P.R.	Asian/ Pacific	%A	American Indian	%I	Foreign National	%F
1970	42,966	358	0.8	378	0.9									
1971	43,167	353	0.8	407	0.9								1,565	3.6
1972	44,190	525	1.2	579	1.3								1,944	4.4
1973	43,429	624	1.4	657	1.5	866	2.0	343	684	1.6	46	0.1	2,136	4.9
1974	41,407	744	1.8	756	1.8	1,037	2.5	397	957	2.3	32	0.1	2,436	5.9
1975	38,210	878	2.3	734	1.9	1,060	2.8	416	883	2.3	44	0.1	2,466	6.5
1976	37,970	1,376	3.6	777	2.0	1,019	2.7	339	1,074	2.8	41	0.1	2,799	7.4
1977	40,095	1,961	4.9	844	2.1	1,035	2.6	333	1,146	2.9	36	0.1	2,996	7.5
1978	46,091	3,280	7.1	894	1.9	1,072	2.3	324	1,195	2.6	37	0.1	3,084	6.7
1979	52,598	4,716	9.0	1,076	2.0	1,212	2.3	404	1,532	2.9	59	0.1	3,788	7.2
1980	58,742	5,680	9.7	1,320	2.2	1,332	2.3	329	1,922	3.3	60	0.1	4,895	8.3
1981	62,935	6,545	10.4	1,445	2.3	1,513	2.4	320	2,267	3.6	90	0.1	5,622	8.9
1982	66,990	8,140	12.2	1,644	2.5	1,608	2.4	338	2,577	3.8	91	0.1	5,410	8.1
1983	72,471	9,566	13.2	1,842	2.5	1,883	2.6	349	3,098	4.3	97	0.1	6,151	8.5
1984	76,931	10,761	14.0	2,022	2.6	2,038	2.6	355	3,609	4.7	112	0.1	5,833	7.6
1985	77,892	11,516	14.8	2,045	2.6	2,095	2.7	363	4,302	5.5	109	0.1	5,958	7.6
1986	78,178	11,264	14.4	2,114	2.7	2,227	2.8	363	4,826	6.2	129	0.2	6,275	8.0
1987	75,735	11,675	15.4	2,182	2.9	2,356	3.1	516	5,056	6.7	149	0.2	6,048	8.0
1988	71,386	10,940	15.3	2,211	3.1	2,471	3.5	551	5,591	7.8	187	0.3	5,763	8.1
1989	68,824	10,529	15.3	2,122	3.1	2,549	3.7	553	5,873	8.5	192	0.3	5,719	8.3
1990	65,967	10,130	15.4	2,173	3.3	2,473	3.7	516	5,989	9.1	122	0.2	5,121	7.8

MASTERS*

Year	Total	Women	%W	Black	%B	Hispanic Total+	%H	U. of P.R.	Asian/ Pacific	%A	American Indian	%I	Foreign National	%F
1970	15,548	170	1.1	50	0.3									
1971	16,282	158	1.0	47	0.3								2,952	18.1
1972	17,356	299	1.7	78	0.4								2,973	17.1
1973	18,152	226	1.2	104	0.6	139	0.8	13	261	1.4	15	0.1	2,551	14.1
1974	15,885	393	2.5	158	1.0	192	1.2	6	425	2.7	4	0.0	3,099	19.5
1975	15,773	380	2.4	141	0.9	185	1.2	2	482	3.1	3	0.0	3,250	20.6
1976	16,506	557	3.4	154	0.9	191	1.2	7	782	4.7	14	0.1	3,691	22.4
1977	16,551	646	3.9	147	0.9	217	1.3	6	708	4.3	7	0.0	3,825	23.1
1978	16,182	814	5.0	202	1.2	243	1.5	9	797	4.9	4	0.0	3,720	23.0
1979	15,624	866	5.5	157	1.0	213	1.4	15	675	4.3	9	0.1	3,944	25.2
1980	17,243	1,092	6.3	167	1.0	247	1.4	7	827	4.8	4	0.0	4,512	26.2
1981	17,914	1,225	6.8	183	1.0	281	1.6	1	968	5.4	8	0.0	4,677	26.1
1982	18,543	1,539	8.3	188	1.0	218	1.2	8	850	4.6	15	0.1	5,284	28.5
1983	19,909	1,796	9.0	258	1.3	310	1.6	12	1,294	6.5	16	0.1	5,145	25.8
1984	21,226	2,146	10.1	257	1.2	373	1.8	9	1,354	6.4	25	0.1	5,728	27.0
1985	22,502	2,538	11.3	311	1.4	371	1.6	9	1,529	6.8	28	0.1	6,115	27.2
1986	23,025	2,745	11.9	345	1.5	331	1.4	9	1,712	7.4	27	0.1	5,735	24.9
1987	24,290	3,119	12.8	366	1.5	393	1.6	9	1,774	7.3	33	0.1	6,315	26.0
1988	25,616	3,378	13.2	424	1.7	450	1.8	10	1,999	7.8	36	0.1	7,474	29.2
1989	26,412	3,585	13.6	365	1.4	497	1.9	28	1,785	6.8	32	0.1	7,329	27.7
1990	26,755	3,826	14.3	422	1.6	518	1.9	33	2,230	8.3	38	0.1	7,913	29.6

* Includes professional Engineer degrees. + Total Hispanic includes University of Puerto Rico.

TABLE 7-8

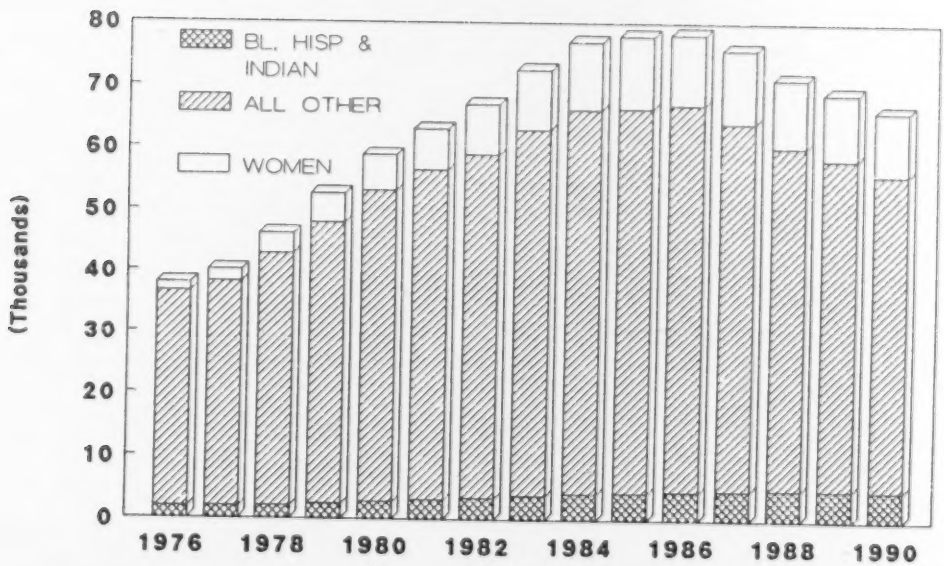
ENGINEERING DEGREES BY LEVEL, SEX, RACE & CITIZENSHIP, 1985 – 1989 (Continued)

DOCTORATES													
Year	Total	Women	%W	Black	%B	Hispanic Total+	%H	U. of P.R.	Asian/ Pacific	%A	American Indian	%I	Foreign National	%F
1970	3,620	16	0.4	1	0.0									
1971	3,640	25	0.7	8	0.2								741	20.4
1972	3,774	35	0.9	13	0.3								773	20.5
1973	3,587	48	1.3	13	0.4	12	0.3		55	1.5	1	0.0	708	19.7
1974	3,362	36	1.1	12	0.4	20	0.6		106	3.2			1,014	30.2
1975	3,039	53	1.7	17	0.6	28	0.9		141	4.6	2	0.1	891	29.3
1976	2,977	56	1.9	10	0.3	15	0.5		168	5.6			1,060	35.6
1977	2,814	67	2.4	16	0.6	22	0.8		158	5.6	1	0.0	995	35.4
1978	2,573	51	2.0	15	0.6	25	1.0		175	6.8	3	0.1	874	34.0
1979	2,815	61	2.2	19	0.7	22	0.8		177	6.3			929	33.0
1980	2,751	88	3.2	19	0.7	25	0.9		154	5.6	1	0.0	982	35.7
1981	2,841	90	3.2	16	0.6	20	0.7		148	5.2	3	0.1	1,054	37.1
1982	2,887	126	4.4	11	0.4	26	0.9		124	4.3	2	0.1	1,167	40.4
1983	3,023	142	4.7	19	0.6	41	1.4		173	5.7			1,192	39.4
1984	3,234	153	4.7	24	0.7	25	0.8		267	8.3			1,253	38.7
1985	3,383	192	5.7	32	0.9	34	1.0		246	7.3	4	0.1	1,400	41.4
1986	3,686	246	6.7	17	0.5	38	1.0		229	6.2	4	0.1	1,441	39.1
1987	4,175	296	7.1	18	0.4	25	0.6		234	5.6	6	0.1	1,800	43.1
1988	4,571	313	6.8	29	0.6	36	0.8		274	6.0	3	0.1	2,033	44.5
1989	5,017	440	8.8	31	0.6	37	0.7		281	5.6	2	0.0	2,299	45.8
1990	5,424	495	9.1	36	0.7	53	1.0		300	5.5	7	0.1	2,649	48.8

Note: 1970 and 1971 totals for minority groups are for only numbers actually reported. From 1972 through 1985 extimates based on previous year's reports were made for schools that did not report. Beginning in 1986 no estimates were added for the few mission schools.

CHART 7-4

ENGINEERING BS DEGREES
1976 - 1990



Source: EMC

Graph by CPST

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1990, Engineering Manpower Commission

TABLE 7-9

ENGINEERING GRADUATES* BY SEX, CITIZENSHIP AND MINORITY STATUS, 1990

Ethnic Group/ Citizenship	Engineering Degrees						Technology Degrees			
	BS		MS+		PhD		Associate		BS	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total	63,993	100	26,150	100	5,335	100	11,938	100	10,261	100
White American	49,446	77.3	16,094	61.5	2,516	47.2	10,650	89.2	8,682	84.6
African American	2,062	3.2	377	1.4	35	0.7	500	4.2	602	5.9
Hispanic American	2,279	3.6	465	1.8	48	0.9	226	1.9	45	0.4
Native American	103	0.2	34	0.1	7	0.1	33	0.3	15	0.1
Asian American	5,328	8.3	1,979	7.6	281	5.3	341	2.9	446	4.3
Foreign Nationals	4,775	7.5	7,201	27.5	2,448	45.9	188	1.6	471	4.6
Under-Rep Minorities	4,444	6.9	876	3.3	90	1.7	759	6.4	662	6.5
Women	9,977	100	3,802	100	493	100	1,309	100	845	100
White American	7,263	72.8	2,551	67.1	314	63.7	1,127	86.1	646	76.4
African American	630	6.3	98	2.6	5	1.0	91	7.0	121	14.3
Hispanic American	437	4.4	79	2.1	5	1.0	23	1.8	19	2.2
Native American	14	0.1	6	0.2	0	0.0	8	0.6	3	0.4
Asian American	1,081	10.8	349	9.2	24	4.9	47	3.6	37	4.4
Foreign Nationals	552	5.5	719	18.9	145	29.4	13	1.0	19	2.2
Under-Rep Minorities	1,081	10.8	183	4.8	10	2.0	122	9.3	143	16.9
% Women	15.6		14.5		9.2		11.0		8.2	
White American	14.7		15.9		12.5		10.6		7.4	
African American	30.6		26.0		14.3		18.2		20.1	
Hispanic American	19.2		17.0		10.4		10.2		42.2	
Native American	13.6		17.6		0.0		24.2		20.0	
Asian American	20.3		17.6		8.5		13.8		8.3	
Foreign Nationals	11.6		10.0		5.9		6.9		4.0	
Under-Rep Minorities	24.3		20.9		11.1		16.1		21.6	
Men	54,016	100	22,348	100	4,842	100	10,629	100	9,416	100
White American	42,183	78.1	13,543	60.6	2,202	45.5	9,523	89.6	8,036	85.3
African American	1,432	2.7	279	1.2	30	0.6	409	3.8	481	5.1
Hispanic American	1,842	3.4	386	1.7	43	0.9	203	1.9	26	0.3
Native American	89	0.2	28	0.1	7	0.1	25	0.2	12	0.1
Asian American	4,247	7.9	1,630	7.3	257	5.3	294	2.8	409	4.3
Foreign Nationals	4,223	7.8	6,482	29.0	2,303	47.6	175	1.6	452	4.8
Under-Rep Minorities	3,363	6.2	693	3.1	80	1.7	637	6.0	519	5.5
% Men	84.4		85.5		90.8		89.0		91.8	
White American	85.3		84.1		87.5		89.4		92.6	
African American	69.4		74.0		85.7		81.8		79.9	
Hispanic American	80.8		83.0		89.6		89.8		57.8	
American Indian	86.4		82.4		100.0		75.8		80.0	
Asian American	79.7		82.4		91.5		86.2		91.7	
Foreign Nationals	88.4		90.0		94.1		93.1		96.0	
Under-Rep Minorities	75.7		79.1		88.9		83.9		78.4	

* Includes only those whose race, sex & citizenship were reported. + Includes Engineer Degrees

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1988 through 1990, Engineering Manpower Commission

TABLE 7-10

ENGINEERING DOCTORATE DEGREES AWARDED TO WOMEN, MINORITIES, & FOREIGN NATIONALS BY CURRICULUM
1988 – 1990

CURRICULUM	TOTAL			WOMEN			AFRICAN AM			HISPANIC			ASIAN AMER			NATIVE AM.			FOREIGN NATIONAL		
	1988	1989	1990	'88	'89	'90	'88	'89	'90	'88	'89	'90	'88	'89	'90	'88	'89	'90	'88	'89	'90
Aerospace	150	167	189	7	9	4	0	3	1	0	1	1	9	10	12	0	0	0	59	91	102
Agricultural	61	97	94	4	4	7	1	1	3	1	1	2	0	3	3	0	0	0	22	48	46
Architectural	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioengineering	70	86	103	9	18	17	0	2	2	1	3	0	2	4	6	0	0	1	10	17	27
Ceramics	24	25	38	0	2	7	0	0	0	0	1	0	1	0	0	0	0	1	13	9	16
Chemical	657	680	667	65	78	87	5	2	5	4	6	12	64	37	28	0	0	1	229	250	246
Civil/Constr	518	554	539	29	52	55	1	2	1	4	3	6	21	30	23	0	0	0	286	305	318
Computer	262	277	339	23	33	44	0	3	2	1	1	2	19	13	19	0	0	0	94	108	141
EE	1003	1139	1262	51	79	89	9	8	9	10	10	12	63	71	89	1	1	0	463	517	631
Eng Science	191	238	239	10	19	20	1	2	4	1	0	0	12	10	15	0	1	0	71	85	93
Environmental	63	49	51	13	10	10	0	0	0	0	1	0	3	3	3	0	0	0	26	14	21
Gen Engineering	66	81	58	1	6	3	1	1	0	1	0	1	8	9	8	0	0	0	30	41	23
Industrial	149	204	200	22	28	36	2	3	1	1	2	3	3	16	10	1	0	0	89	110	96
Marine	30	26	21	0	1	5	0	0	0	0	0	3	0	0	0	0	0	0	20	18	14
Materials/Metall	310	326	392	29	40	41	1	0	0	4	0	2	19	28	15	0	0	2	130	142	195
Mechanical	738	795	900	32	33	45	0	3	6	6	5	6	46	32	54	1	0	1	381	425	521
Mining/Mineral	56	74	79	4	9	7	1	0	2	1	0	1	2	2	4	0	0	0	16	32	32
Nuclear	102	90	115	3	6	9	3	0	0	0	1	2	3	3	7	0	0	0	45	42	52
Petroleum/Nat Gas	38	29	54	2	1	0	1	1	0	1	0	0	0	2	2	0	0	0	14	14	32
Systems	63	56	69	5	8	6	2	0	0	0	2	0	0	6	1	0	0	1	31	27	39
Other	20	24	15	4	4	3	1	0	0	0	0	0	0	2	1	0	0	0	4	4	4
TOTAL	4571	5017	5424	313	440	495	29	31	36	36	37	53	275	281	300	3	2	7	2033	2299	2649

Note: Women are included in ethnic and foreign national categories. Foreign nationals are not included in ethnic categories

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1988 through 1990, Engineering Manpower Commission

TABLE 7-11

ENGINEERING MASTERS* DEGREES AWARDED TO WOMEN, MINORITIES & FOREIGN NATIONALS BY CURRICULUM
1988 – 1990

CURRICULUM	TOTAL			WOMEN			AFRICAN AM			HISPANIC			ASIAN AMER			NATIVE AM			FOREIGN NATIONAL		
	1988	1989	1990	'88	'89	'90	'88	'89	'90	'88	'89	'90	'88	'89	'90	'88	'89	'90	'88	'89	'90
Aerospace	843	865	1016	65	65	86	4	2	10	18	15	15	39	35	68	1	0	0	143	185	198
Agricultural	183	160	189	21	13	24	1	0	4	2	0	8	3	3	1	0	0	0	72	64	80
Architectural	34	29	33	4	0	0	0	0	1	0	0	0	2	0	1	1	0	0	14	13	22
Bioengineering	257	303	310	74	66	102	2	6	5	4	3	5	13	12	19	0	0	2	44	82	82
Ceramics	96	100	80	21	20	16	1	0	0	1	0	1	3	6	2	0	1	1	30	24	18
Chemical	1274	1220	1140	207	222	185	24	21	24	20	38	29	80	84	59	0	4	2	385	360	436
Civil/Constr	3041	3050	2940	345	360	416	30	38	47	57	69	59	171	184	167	2	8	8	1145	1082	1059
Computer	2881	2930	3265	568	607	698	45	52	40	45	38	44	236	288	334	3	3	1	752	782	959
EE	7335	7520	7691	746	815	843	109	136	122	151	131	158	685	739	868	7	9	13	2168	2106	2268
Eng Science	646	675	701	107	118	124	11	13	12	12	11	10	52	73	63	0	2	2	99	123	122
Environmental	329	427	471	100	103	120	1	4	10	6	6	10	9	25	34	0	0	1	52	92	88
Gen Engineering	565	601	496	65	76	93	5	11	8	8	10	13	54	75	51	1	0	0	161	181	69
Industrial	2140	2404	2489	379	412	416	53	72	52	54	58	65	103	130	172	9	0	1	494	575	705
Marine	120	121	146	5	9	13	0	0	3	4	1	2	1	2	2	0	0	0	55	43	49
Materials/Metall	623	672	671	119	130	119	5	2	6	9	10	9	42	45	43	2	0	0	204	213	248
Mechanical	3767	3855	3994	299	304	341	46	38	48	61	54	57	226	240	277	3	8	6	1137	1194	1143
Mining/Mineral	282	237	192	39	39	20	1	1	1	1	3	2	1	2	1	1	0	0	71	54	64
Nuclear	221	245	236	17	19	25	0	1	3	5	5	5	11	6	8	0	1	1	84	63	65
Petroleum/Nat Gas	220	197	162	18	14	9	2	0	2	11	4	6	10	12	9	1	0	0	51	72	63
Systems	636	662	692	156	154	186	16	23	26	8	11	16	41	33	45	1	0	0	126	141	155
Other	123	139	120	22	39	30	0	4	0	2	1	1	3	5	2	0	0	0	42	25	20
TOTAL	25616	26412	27034	3377	3585	3868	356	424	424	479	468	515	1785	1999	2226	32	36	38	7329	7474	7913

Note: Women are included in ethnic and foreign national categories. Foreign nationals are not included in ethnic categories.

* Includes Professional Engineer Degrees.

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1988 through 1990, Engineering Manpower Commisson

TABLE 7-12

ENGINEERING BACHELORS DEGREES AWARDED TO WOMEN, MINORITIES & FOREIGN NATIONALS BY CURRICULUM
1987 – 1990

CURRICULUM	TOTAL			WOMEN			AFRICAN AM			HISPANIC			ASIAN AMER			NATIVE AM			FOREIGN NAT		
	1988	1989	1990	'88	'89	'90	'88	'89	'90	'88	'89	'90	'88	'89	'90	'88	'89	'90	'88	'89	'90
Aerospace	2949	3065	2971	279	304	316	38	56	48	76	89	80	142	158	201	8	11	0	116	149	147
Agricultural	362	330	317	28	29	49	5	3	4	3	8	9	2	4	3	1	0	1	25	20	15
Architectural	356	346	375	65	75	69	29	36	22	21	11	7	39	11	14	0	3	0	50	67	56
Bioengineering	636	677	695	199	218	207	13	15	15	27	26	18	77	80	102	4	2	0	38	53	69
Ceramics	368	289	348	106	74	75	15	7	8	11	3	8	14	11	15	0	0	0	8	6	7
Chemical	4082	3711	3622	1079	1101	1053	164	136	140	152	150	162	234	246	221	11	6	6	261	242	224
Civil/Constr	7714	7688	7587	1072	1036	1101	179	170	182	267	274	279	359	353	388	36	28	15	950	864	600
Computer	4275	4398	4355	797	817	779	117	139	122	185	172	162	438	550	606	15	15	5	422	415	381
EE	24367	22929	21385	3177	2930	2600	850	861	882	784	861	830	2887	2930	2920	54	51	41	2229	2238	2168
Eng Science	1378	1339	1045	260	226	201	36	34	18	34	22	21	133	160	80	3	2	2	59	72	54
Environmental	192	138	137	46	48	56	0	1	0	3	2	4	3	3	2	1	0	2	11	1	1
Gen Engineering	1085	1058	1239	228	197	215	62	42	41	43	47	59	93	106	123	4	2	3	54	55	65
Industrial	4584	4519	4306	1283	1304	1207	223	195	192	245	263	242	183	229	244	3	12	4	383	378	373
Marine	549	468	475	33	31	27	10	4	3	10	3	9	15	15	10	0	0	0	24	17	15
Materials/Metall	877	842	857	202	196	214	21	15	16	20	20	20	68	42	56	4	3	1	32	32	38
Mechanical	15610	15369	14969	1772	1682	1732	421	377	452	500	522	531	821	898	938	32	55	30	873	935	779
Mining/Mineral	404	274	168	86	54	27	2	2	0	7	7	3	10	6	3	7	0	0	47	36	19
Nuclear	306	303	264	34	35	34	6	4	6	14	14	9	18	13	10	0	0	0	16	14	7
Petroleum/Nat Gas	612	436	286	53	48	20	10	5	5	22	21	7	16	11	7	4	2	1	119	65	73
Systems	474	457	362	100	83	100	13	14	13	15	13	9	34	40	46	0	0	0	39	53	24
Other	206	188	204	41	41	44	7	6	4	2	1	3	5	7	0	0	0	1	7	7	6
TOTAL	71386	68824	65967	10940	10529	10126	2221	2122	2173	2441	2529	2472	5591	5873	5989	187	192	112	5763	5719	5121

Note: Women are included in ethnic and foreign national categories. Foreign nationals are not included in ethnic categories.

FIELD: Engineering

SOURCE: Engineering and Technology Degrees 1975 through 1990, Engineering Manpower Commision

TABLE 7-13

BACHELORS DEGREES IN CHEMICAL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1990

YEAR	ALL ENGINEER	CHEM ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	3,167	8.3	131	4.1	40	1.3	37	1.2	74	2.3	0	0.0	--	--
1976	37,970	3,146	8.3	239	7.6	54	1.7	22	0.7	72	2.3	2	0.1	267	8.5
1977	40,095	3,593	9.0	403	11.2	52	1.4	37	1.0	113	3.1	2	0.1	288	8.0
1978	46,091	4,621	10.0	676	14.6	86	1.9	58	1.3	139	3.0	4	0.1	291	6.3
1979	52,598	5,837	11.1	978	16.8	107	1.8	40	0.7	210	3.6	5	0.1	361	6.2
1980	58,742	6,555	11.2	1,130	17.2	137	2.1	87	1.3	239	3.6	11	0.2	353	5.4
1981	62,935	6,863	10.9	1,162	16.9	166	2.4	179	2.6	234	3.4	17	0.2	429	6.3
1982	66,990	7,039	10.5	1,448	20.6	182	2.6	111	1.6	258	3.7	10	0.1	311	4.4
1983	72,471	7,499	10.3	1,703	22.7	207	2.8	195	2.6	309	4.1	9	0.1	379	5.1
1984	76,931	7,685	10.0	1,829	23.8	250	3.3	113	1.5	376	4.9	9	0.1	328	4.3
1985	77,892	7,324	9.4	1,886	25.8	221	3.0	145	2.0	341	4.7	12	0.2	330	4.5
1986	78,178	6,148	7.9	1,483	24.1	194	3.2	179	2.9	296	4.8	13	0.2	281	4.6
1987	75,735	5,129	6.8	1,379	26.9	186	3.6	149	2.9	231	4.5	10	0.2	237	4.6
1988	71,386	4,082	5.7	1,079	26.4	164	4.0	152	3.7	234	5.7	11	0.3	261	6.4
1989	68,824	3,711	5.4	1,101	29.7	136	3.7	150	4.0	246	6.6	6	0.2	242	6.5
1990	65,967	3,622	5.5	1,053	29.1	140	3.9	163	4.5	221	6.1	6	0.2	224	6.2
TOTAL	925,048	82,399	8.9	16,627	20.2	2,182	2.6	1,654	2.0	3,372	4.1	121	0.1	4,358	5.3

TABLE 7-14

BACHELORS DEGREES IN CIVIL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1990

YEAR	ALL ENGINEER	CIVIL ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	7,957	20.8	154	1.9	94	1.2	147	1.8	196	2.5	9	0.1	--	--
1976	37,970	7,947	20.9	220	2.8	87	1.1	126	1.6	182	2.3	13	0.2	471	5.9
1977	40,095	8,248	20.6	398	4.8	109	1.3	122	1.5	251	3.0	11	0.1	563	6.8
1978	46,091	9,168	19.9	633	6.9	118	1.3	169	1.8	209	2.3	5	0.1	728	7.9
1979	52,598	10,030	19.1	948	9.5	152	1.5	149	1.5	303	3.0	11	0.1	890	8.9
1980	58,742	10,191	17.3	931	9.1	158	1.6	168	1.6	290	2.8	9	0.1	1,309	12.8
1981	62,935	10,547	16.8	1,065	10.1	176	1.7	265	2.5	323	3.1	17	0.2	1,455	13.8
1982	66,990	10,330	15.4	1,144	11.1	176	1.7	181	1.8	309	3.0	14	0.1	1,456	14.1
1983	72,471	10,484	14.5	1,315	12.5	213	2.0	300	2.9	369	3.5	12	0.1	1,619	15.4
1984	76,931	9,877	12.8	1,295	13.1	197	2.0	254	2.6	356	3.6	14	0.1	1,452	14.7
1985	77,892	9,468	12.2	1,214	12.8	188	2.0	222	2.3	343	3.6	16	0.2	1,509	15.9
1986	78,178	8,798	11.3	1,091	12.4	168	1.9	282	3.2	351	4.0	14	0.2	1,425	16.2
1987	75,735	8,388	11.1	1,096	13.1	200	2.4	252	3.0	354	4.2	18	0.2	1,194	14.2
1988	71,386	7,714	10.8	1,072	13.9	179	2.3	267	3.5	359	4.7	36	0.5	950	12.3
1989	68,824	7,688	11.2	1,036	13.5	170	2.2	274	3.6	353	4.6	28	0.4	864	11.2
1990	65,967	7,587	11.5	1,101	14.5	182	2.4	279	3.7	388	5.1	15	0.2	600	7.9
TOTAL	925,048	136,835	14.8	13,612	9.9	2,385	1.7	3,178	2.3	4,548	3.3	227	0.2	15,885	12.3

FIELD: Engineering

SOURCE: Engineering and Technology Degrees 1975 through 1990, Engineering Manpower Commision

TABLE 7-15

BACHELORS DEGREES IN COMPUTER ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1990

YEAR	ALL ENGINEERS	COMP ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	599	1.6	54	9.0	9	1.5	6	1.0	10	1.7	1	0.2	--	--
1976	37,970	796	2.1	79	9.9	24	3.0	5	0.6	25	3.1	2	0.3	37	4.6
1977	40,095	1,280	3.2	117	9.1	40	3.1	11	0.9	111	8.7	3	0.2	82	6.4
1978	46,091	1,546	3.4	193	12.5	39	2.5	23	1.5	140	9.1	1	0.1	93	6.0
1979	52,598	1,510	2.9	206	13.6	22	1.5	23	1.5	93	6.2	0	0.0	77	5.1
1980	58,742	1,816	3.1	260	14.3	34	1.9	32	1.8	180	9.9	2	0.1	94	5.2
1981	62,935	2,356	3.7	316	13.4	40	1.7	35	1.5	212	9.0	2	0.1	167	7.1
1982	66,990	2,666	4.0	476	17.9	63	2.4	14	0.5	195	7.3	15	0.6	152	5.7
1983	72,471	2,643	3.6	506	19.1	62	2.3	59	2.2	185	7.0	3	0.1	130	4.9
1984	76,931	3,499	4.5	800	22.9	83	2.4	64	1.8	289	8.3	2	0.1	176	5.0
1985	77,892	4,248	5.5	945	22.2	102	2.4	76	1.8	393	9.3	4	0.1	257	6.0
1986	78,178	4,999	6.4	1,045	20.9	91	1.8	132	2.6	482	9.6	10	0.2	381	7.6
1987	75,735	5,012	6.6	1,072	21.4	133	2.7	199	4.0	450	9.0	12	0.2	443	8.8
1988	71,386	4,275	6.0	797	18.6	117	2.7	185	4.3	438	10.2	15	0.4	422	9.9
1989	68,824	4,398	6.4	817	18.6	139	3.2	172	3.9	550	12.5	15	0.3	415	9.4
1990	65,967	4,355	6.6	779	17.9	122	2.8	162	3.7	606	13.9	5	0.1	381	8.7
TOTAL	925,048	41,643	4.5	7,683	18.4	998	2.4	1,036	2.5	3,753	9.0	87	0.2	2,926	7.1

TABLE 7-16

BACHELORS DEGREES IN ELECTRICAL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1990

YEAR	ALL ENGINEERS	ELEC ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	10,277	26.9	138	1.3	286	2.8	203	2.0	318	3.1	11	0.1	--	--
1976	37,970	9,954	26.2	207	2.1	257	2.6	194	1.9	310	3.1	11	0.1	650	6.5
1977	40,095	9,837	24.5	239	2.4	296	3.0	186	1.9	276	2.8	7	0.1	727	7.4
1978	46,091	10,702	23.2	414	3.9	293	2.7	195	1.8	270	2.5	9	0.1	686	6.4
1979	52,598	12,213	23.2	624	5.1	344	2.8	226	1.9	394	3.2	16	0.1	889	7.3
1980	58,742	13,594	23.1	807	5.9	464	3.4	269	2.0	565	4.2	13	0.1	1,095	8.1
1981	62,935	14,558	23.1	929	6.4	499	3.4	435	3.0	683	4.7	22	0.2	1,317	9.0
1982	66,990	16,094	24.0	1,280	8.0	525	3.3	344	2.1	881	5.5	19	0.1	1,333	8.3
1983	72,471	18,590	25.7	1,786	9.6	603	3.2	593	3.2	1,176	6.3	27	0.1	1,722	9.3
1984	76,931	20,495	26.6	1,996	9.7	626	3.1	526	2.6	1,320	6.4	19	0.1	1,761	8.6
1985	77,892	22,055	28.3	2,386	11.6	720	3.3	561	2.7	1,866	9.1	25	0.1	1,828	8.9
1986	78,178	24,514	31.4	2,755	12.5	806	3.7	721	3.3	2,337	10.6	44	0.2	2,165	9.8
1987	75,735	25,198	33.3	3,173	12.6	853	3.4	762	3.0	2,674	10.6	54	0.2	2,251	8.9
1988	71,386	24,367	34.1	3,177	13.0	850	3.5	784	3.2	2,887	11.8	54	0.2	2,229	9.1
1989	68,824	22,929	33.3	2,930	12.8	861	3.8	861	3.8	2,930	12.8	51	0.2	2,238	9.8
1990	65,967	21,385	32.4	2,600	12.2	882	4.1	830	3.9	2,920	13.7	41	0.2	2,168	10.1
TOTAL	925,048	255,377	30.4	22,841	8.9	8,283	3.2	6,860	2.7	18,887	7.4	382	0.1	20,891	8.5

FIELD: Engineering

SOURCE: Engineering and Technology Degrees 1975 through 1990, Engineering Manpower Commision

TABLE 7-17
BACHELORS DEGREES IN INDUSTRIAL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1990

YEAR	ALL ENGINEERS	INDUS ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	2,096	5.5	62	3.0	34	1.6	42	2.0	31	1.5	0	0.0	--	--
1976	37,970	1,826	4.8	84	4.6	28	1.5	31	1.7	47	2.6	3	0.2	186	10.2
1977	40,095	1,805	4.5	114	6.3	29	1.6	43	2.4	38	2.1	1	0.1	208	11.5
1978	46,091	2,054	4.5	233	11.3	51	2.5	36	1.8	62	3.0	3	0.1	203	9.9
1979	52,598	2,433	4.6	363	14.9	58	2.4	59	2.4	52	2.1	3	0.1	236	9.7
1980	58,742	2,710	4.6	456	16.8	66	2.4	61	2.3	87	3.2	2	0.1	290	10.7
1981	62,935	3,225	5.1	623	19.3	77	2.4	127	3.9	81	2.5	3	0.1	313	9.7
1982	66,990	3,695	5.5	849	23.0	131	3.5	79	2.1	71	1.9	3	0.1	283	7.7
1983	72,471	3,808	5.3	996	26.2	159	4.2	155	4.1	112	2.9	5	0.1	374	9.8
1984	76,931	3,923	5.1	1,065	27.1	176	4.5	111	2.8	136	3.5	4	0.1	317	8.1
1985	77,892	4,321	5.5	1,219	31.1	159	3.7	108	2.8	168	4.3	6	0.2	319	8.1
1986	78,178	4,645	5.9	1,266	29.3	168	3.9	228	5.3	179	4.1	7	0.2	378	8.7
1987	75,735	4,572	6.0	1,384	30.3	190	4.2	233	5.1	181	4.0	3	0.1	369	8.1
1988	71,386	4,584	6.4	1,283	28.0	223	4.9	245	5.3	183	4.0	3	0.1	383	8.4
1989	68,824	4,519	6.6	1,304	28.9	195	4.3	263	5.8	229	5.1	12	0.3	378	8.4
1990	65,067	4,306	6.6	1,207	28.0	192	4.5	242	5.6	244	5.7	4	0.1	373	8.7
TOTAL	925,048	50,216	5.4	11,301	22.5	1,744	3.5	1,821	3.6	1,657	3.3	58	0.1	4,237	8.4

TABLE 7-18
BACHELORS DEGREES IN MECHANICAL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1990

YEAR	ALL ENGINEERS	MECH ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	7,076	18.5	85	1.2	150	2.1	113	1.6	130	1.8	9	0.1	--	--
1976	37,970	6,825	18.0	141	2.1	120	1.8	101	1.5	138	2.0	4	0.1	484	7.1
1977	40,095	7,549	18.8	242	3.2	163	2.2	90	1.2	182	2.4	7	0.1	534	7.1
1978	46,091	8,786	19.1	428	4.9	128	1.5	127	1.4	184	2.1	5	0.1	561	6.4
1979	52,598	10,076	19.2	593	5.9	225	2.2	152	1.5	243	2.4	18	0.2	602	6.0
1980	58,742	11,916	20.3	864	7.3	264	2.2	204	1.7	281	2.4	8	0.1	915	7.7
1981	62,935	13,462	21.4	1,070	7.9	322	2.4	259	1.9	414	3.1	18	0.1	1,092	8.1
1982	66,990	14,178	21.2	1,228	8.7	336	2.4	250	1.8	482	3.4	15	0.1	968	6.8
1983	72,471	16,484	22.7	1,503	9.1	397	2.4	338	2.1	562	3.4	21	0.1	1,182	7.2
1984	76,931	17,214	22.4	1,792	10.4	373	2.2	302	1.8	618	3.6	34	0.2	1,006	5.8
1985	77,892	17,152	22.0	1,812	10.5	401	2.3	352	2.0	691	4.0	29	0.2	976	5.7
1986	78,178	16,706	21.4	1,727	10.1	430	2.5	385	2.2	670	3.9	21	0.1	942	5.5
1987	75,735	16,056	21.2	1,724	10.7	383	2.4	488	3.0	701	4.4	28	0.2	855	5.3
1988	71,386	15,610	21.9	1,772	11.4	421	2.7	500	3.2	821	5.3	32	0.2	873	5.6
1989	68,824	15,369	22.3	1,682	10.9	377	2.5	522	3.4	898	5.8	55	0.4	935	6.1
1990	65,967	14,969	22.7	1,732	11.6	452	3.0	531	3.5	938	6.3	30	0.2	779	5.2
TOTAL	925,048	194,459	21.0	16,663	8.6	4,490	2.3	4,183	2.2	7,015	3.6	304	0.2	11,925	6.4

SOURCE: Engineering and Technology Degrees 1975 through 1990, Engineering Manpower Commision

TABLE 7-19

LEADING SCHOOLS* IN NUMBER OF ENGINEERING DEGREES AWARDED TO WOMEN, 1990

SCHOOL	Bachelors			Masters#			PhDs			All Degrees		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
Purdue University	1142	277	24.3	411	66	16.1	154	15	9.7	1707	358	21.0
Mass Inst of Technology	635	186	29.3	584	87	14.9	255	33	12.9	1474	306	20.8
Georgia Inst of Tech	1126	203	18.0	473	71	15.0	81	6	7.4	1680	280	16.7
U Illinois-Champaign	1316	192	14.6	538	66	12.3	227	20	8.8	2081	278	13.4
U Cal-Berkeley	756	160	21.2	380	66	17.4	201	18	9.0	1337	244	18.2
U Michigan-Ann Arbor	833	168	20.2	496	61	12.3	141	10	7.1	1470	239	16.3
NC State Univ-Raleigh	1003	195	19.4	254	39	15.4	79	5	6.3	1336	239	17.9
Penn State University	1199	163	13.6	399	66	16.5	102	4	3.9	1700	233	13.7
Stanford University	287	57	19.9	823	147	17.9	193	18	9.3	1303	222	17.0
Johns Hopkins University	208	40	19.2	721	173	24.0	31	4	12.9	960	217	22.6
U Washington	705	147	20.9	292	57	19.5	63	9	14.3	1060	213	20.1
Texas A&M University	1019	158	15.5	321	38	11.8	83	9	10.8	1423	205	14.4
Cornell University	600	115	19.2	333	63	18.9	141	9	6.4	1074	187	17.4
Ohio State University	902	136	15.1	282	41	14.5	98	9	9.2	1282	186	14.5
Virginia Poly Institute	812	117	14.4	345	45	13.0	83	10	12.0	1240	172	13.9
U Southern California	330	57	17.3	649	103	15.9	89	11	12.4	1068	171	16.0
Rensselaer Polytechnic	601	119	19.8	252	45	17.9	66	5	7.6	919	169	18.4
George Washington Univ	146	43	29.5	759	114	15.0	58	10	17.2	963	167	17.3
U Florida	691	121	17.5	251	26	10.4	83	6	7.2	1025	153	14.9
U Missouri-Rolla	647	116	17.9	411	34	8.3	33	2	6.1	1091	152	13.9
Michigan State University	498	105	21.1	164	27	16.5	55	17	30.9	717	149	20.8
U Maryland-College Park	606	109	18.0	223	35	15.7	70	4	5.7	899	148	16.5
U Texas-Austin	609	88	14.4	399	50	12.5	132	8	6.1	1140	146	12.8
U Puerto Rico	516	131	25.4	33	7	21.2	0	0	0.0	549	138	25.1
Northeastern University	490	76	15.5	311	60	19.3	11	1	9.1	812	137	16.9
GMI Engrg & Mgmt Inst	546	133	24.4	0	0	0.0	0	0	0.0	546	133	24.4
U Colorado-Boulder	442	60	13.6	336	62	18.5	57	6	10.5	835	128	15.3
Cal State U-Northridge	330	71	21.5	116	57	49.1	0	0	0.0	446	128	28.7
Cal State U-Long Beach	695	119	17.1	112	8	7.1	0	0	0.0	807	127	15.7
U Minnesota	683	109	16.0	196	12	6.1	88	4	4.5	967	125	12.9
U Wisconsin-Madison	635	91	14.3	232	25	10.8	78	9	11.5	945	125	13.2
Cal Poly-San Luis Obispo	626	121	19.3	32	2	6.3	0	0	O	658	123	18.7
Auburn University	596	103	17.3	123	12	9.8	19	0	0.0	738	115	15.6
George Mason University	204	48	23.5	228	66	28.9	4	0	0.0	436	114	26.1
Arizona State University	397	69	17.4	230	34	14.8	33	4	12.1	660	107	16.2
U Cal-San Diego	401	78	19.5	104	22	21.2	29	5	17.2	534	105	19.7
Boston University	354	68	19.2	190	36	18.9	0	0	O	544	104	19.1
Northwestern University	207	48	23.2	181	44	24.3	90	12	13.3	478	104	21.8
Lehigh University	418	71	17.0	137	24	17.5	54	8	14.8	609	103	16.9
Iowa State University	695	80	11.5	158	17	10.8	41	5	12.2	894	102	11.4
Rutgers University	481	83	17.3	154	16	10.4	41	2	4.9	676	101	14.9
U Arizona	451	76	16.9	184	23	12.5	62	2	3.2	697	101	14.5
Worcester Poly Institute	479	75	15.7	117	23	19.7	17	3	17.6	613	101	16.5
Columbia University	222	43	19.4	232	50	21.6	72	7	9.7	526	100	19.0
CCNY (City College, CUNY)	338	59	17.5	169	41	24.3	10	0	0.0	517	100	19.3
Polytechnic University	327	40	12.2	416	53	12.7	46	6	13.0	789	99	12.5
Drexel University	547	62	11.3	188	32	17.0	25	2	8.0	760	96	12.6
Michigan Tech University	526	96	18.3	60	0	0.0	6	0	0.0	592	96	16.2
Clemson University	420	75	17.9	143	20	14.0	20	1	5.0	583	96	16.5
U Virginia	269	57	21.2	187	33	17.6	38	2	5.3	494	92	18.6
TOTAL TOP 50 SCHOOLS	28966	5214	18.0	14329	2299	16.0	3359	321	9.6	46654	7834	16.8
TOTAL ALL SCHOOLS	63993	9977	15.6	26150	3802	14.5	5335	483	9.1	95478	14262	14.9

* Of thoes that graduated more than 90 in all degree. # Includes Professional Engineer Degrees.

SOURCE: Engineering and Technology Degrees 1975 through 1990, Engineering Manpower Commision

TABLE 7-20

LEADING SCHOOLS* IN PERCENT OF ENGINEERING DEGREES AWARDED TO WOMEN, 1990

SCHOOL	Bachelors			Masters+			PhDs			All Degrees		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
Cal State U-Northridge	330	71	21.5	116	57	49.1	0	0	0.0	446	128	28.7
George Mason University	204	48	23.5	228	66	28.9	4	0	0.0	436	114	26.1
U Puerto Rico	516	131	25.4	33	7	21.2	0	0	0.0	549	138	25.1
GMI Engrg & Mgmt Inst	546	133	24.4	0	0	0.0	0	0	0.0	546	133	24.4
Johns Hopkins University	208	40	19.2	721	173	24.0	31	4	12.9	960	217	22.6
Northwestern University	207	48	23.2	181	44	24.3	90	12	13.3	478	104	21.8
Purdue University	1142	277	24.3	411	66	16.1	154	15	9.7	1707	358	21.0
Michigan State University	498	105	21.1	164	27	16.5	55	17	30.9	717	149	20.8
Mass Inst of Technology	635	186	29.3	584	87	14.9	255	33	12.9	1474	306	20.8
U Washington	705	147	20.9	292	57	19.5	63	9	14.3	1060	213	20.1
U Cal-San Diego	401	78	19.5	104	22	21.2	29	5	17.2	534	105	19.7
CCNY (City College, CUNY)	338	59	17.5	169	41	24.3	10	0	0.0	517	100	19.3
Boston University	354	68	19.2	190	36	18.9	0	0	0.0	544	104	19.1
Columbia University	222	43	19.4	232	50	21.6	72	7	9.7	526	100	19.0
Cal Poly-San Luis Obispo	626	121	19.3	32	2	6.3	0	0	0.0	658	123	18.7
U Virginia	269	57	21.2	187	33	17.6	38	2	5.3	494	92	18.6
Rensselaer Polytechnic	601	119	19.8	252	45	17.9	66	5	7.6	919	169	18.4
U Cal-Berkeley	756	160	21.2	380	66	17.4	201	18	9.0	1337	244	18.2
NC State Univ-Raleigh	1003	195	19.4	254	39	15.4	79	5	6.3	1336	239	17.9
Cornell University	600	115	19.2	333	63	18.9	141	9	6.4	1074	187	17.4
George Washington Univ	146	43	29.5	759	114	15.0	58	10	17.2	963	167	17.3
Stanford University	287	57	19.9	823	147	17.9	193	18	9.3	1303	222	17.0
Lehigh University	418	71	17.0	137	24	17.5	54	8	14.8	609	103	16.9
Northeastern University	490	76	15.5	311	60	19.3	11	1	9.1	812	137	16.9
Georgia Inst of Tech	1126	203	18.0	473	71	15.0	81	6	7.4	1680	280	16.7
Worcester Poly Institute	479	75	15.7	117	23	19.7	17	3	17.6	613	101	16.5
Clemson University	420	75	17.9	143	20	14.0	20	1	5.0	583	96	16.5
U Maryland-College Park	606	109	18.0	223	35	15.7	70	4	5.7	899	148	16.5
U Michigan-Ann Arbor	833	168	20.2	496	61	12.3	141	10	7.1	1470	239	16.3
Michigan Tech University	526	96	18.3	60	0	0.0	6	0	0.0	592	96	16.2
Arizona State University	397	69	17.4	230	34	14.8	33	4	12.1	660	107	16.2
U Southern California	330	57	17.3	649	103	15.9	89	11	12.4	1068	171	16.0
Cal State U-Long Beach	695	119	17.1	112	8	7.1	0	0	0.0	807	127	15.7
Auburn University	596	103	17.3	123	12	9.8	19	0	0.0	738	115	15.6
U Colorado-Boulder	442	60	13.6	336	62	18.5	57	6	10.5	835	128	15.3
Rutgers University	481	83	17.3	154	16	10.4	41	2	4.9	676	101	14.9
U Florida	691	121	17.5	251	26	10.4	83	6	7.2	1025	153	14.9
Ohio State University	902	136	15.1	282	41	14.5	98	9	9.2	1282	186	14.5
U Arizona	451	76	16.9	184	23	12.5	62	2	3.2	697	101	14.5
Texas A&M University	1019	158	15.5	321	38	11.8	83	9	10.8	1423	205	14.4
U Missouri-Rolla	647	116	17.9	411	34	8.3	33	2	6.1	1091	152	13.9
Virginia Poly Institute	812	117	14.4	345	45	13.0	83	10	12.0	1240	172	13.9
Penn State University	1199	163	13.6	399	66	16.5	102	4	3.9	1700	233	13.7
U Illinois-Champaign	1316	192	14.6	538	66	12.3	227	20	8.8	2081	278	13.4
U Wisconsin-Madison	635	91	14.3	232	25	10.8	78	9	11.5	945	125	13.2
U Minnesota	683	109	16.0	196	12	6.1	88	4	4.5	967	125	12.9
U Texas-Austin	609	88	14.4	399	50	12.5	132	8	6.1	1140	146	12.8
Drexel University	547	62	11.3	188	32	17.0	25	2	8.0	760	96	12.6
Polytechnic University	327	40	12.2	416	53	12.7	46	6	13.0	789	99	12.5
Iowa State University	695	80	11.5	158	17	10.8	41	5	12.2	894	102	11.4
TOTAL TOP 50 SCHOOLS	28966	5214	18.0	14329	2299	16.0	3359	321	9.6	46654	7834	16.8
TOTAL ALL SCHOOLS	63993	9977	15.6	26150	3802	14.5	5335	483	9.1	95478	14262	14.9

* Of thoes that graduated more than 90 in all degrees. + Includes Professional Engineer Degrees.

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1990, Engineering Manpower Commission

TABLE 7-21

ENGINEERING SCHOOLS* RANKED BY PERCENT OF NON-ASIAN MINORITIES AMONG BS GRADUATES, 1990

SCHOOL	TOTAL	Black	Hispanic	Nat Amer	SubTotal	% Sub	Asian	Total Min	%Min
Howard University	108	105	0	0	105	97.2	0	105	97.2
Tuskegee University	92	84	0	0	84	91.3	0	84	91.3
NC A&T State University	125	100	1	0	101	80.8	2	103	82.4
Prairie View A&M Univ	112	80	0	0	80	71.4	2	82	73.2
Southern University	99	62	2	0	64	64.6	5	69	69.7
Florida Intl University	155	13	83	1	97	62.6	12	109	70.3
Pratt Institute	140	55	19	0	74	52.9	22	96	68.6
Texas A&I University	102	2	50	0	52	51.0	15	67	65.7
U Texas-El Paso	174	2	63	1	66	37.9	3	69	39.7
CCNY (City College, CUNY)	338	85	35	0	120	35.5	112	232	68.6
U New Mexico	227	1	45	8	54	23.8	8	62	27.3
Cal State U-Los Angeles	153	7	17	1	25	16.3	81	106	69.3
Stanford University	287	21	20	0	41	14.3	50	91	31.7
New Jersey Inst Tech	374	22	31	0	53	14.2	49	102	27.3
Mass Inst of Technology	635	30	53	3	86	13.5	122	208	32.8
U South Florida	359	12	30	0	42	11.7	22	64	17.8
U Florida	691	19	57	1	77	11.1	41	118	17.1
U Cal-Los Angeles	329	4	31	1	36	10.9	138	174	52.9
U Texas-Austin	609	16	49	0	65	10.7	68	133	21.8
San Diego State Univ	308	7	24	0	31	10.1	67	98	31.8
Cal State U-Long Beach	695	16	46	3	65	9.4	198	263	37.8
U Cal-Santa Barbara	275	4	21	0	25	9.1	65	90	32.7
Georgia Inst of Tech	1126	68	29	1	98	8.7	72	170	15.1
Cal Poly-San Luis Obispo	626	6	42	5	53	8.5	98	151	24.1
Cornell University	600	23	24	0	47	7.8	102	149	24.8
Texas A&M University	1019	19	58	2	79	7.8	57	136	13.3
Polytechnic University	327	14	11	0	25	7.6	98	123	37.6
U Houston	199	7	7	0	14	7.0	61	75	37.7
SUNY-Stony Brook Campus	185	7	6	0	13	7.0	58	71	38.4
Rensselaer Polytechnic	601	17	24	0	41	6.8	55	96	16.0
Columbia University	222	6	8	0	14	6.3	73	87	39.2
NC State Univ-Raleigh	1003	54	6	3	63	6.3	54	117	11.7
U Southern California	330	5	14	1	20	6.1	102	122	37.0
Cal State U-Fullerton	188	1	10	0	11	5.9	81	92	48.9
U Maryland-College Park	606	14	19	2	35	5.8	93	128	21.1
U Cal-San Diego	401	1	21	1	23	5.7	105	128	31.9
Boston University	354	12	8	0	20	5.6	49	69	19.5
U Cal-Berkeley	756	16	23	1	40	5.3	335	375	49.6
U Washington	705	14	16	4	34	4.8	166	200	28.4
Purdue University	1142	30	19	1	50	4.4	37	87	7.6
Rutgers University	481	11	10	0	21	4.4	85	106	22.0
San Jose State University	382	7	7	1	15	3.9	142	157	41.1
U Cal-Irvine	180	1	6	0	7	3.9	90	97	53.9
U Michigan-Ann Arbor	833	21	10	1	32	3.8	67	99	11.9
Drexel University	547	17	4	0	21	3.8	52	73	13.3
U Illinois-Champaign	1316	17	26	0	43	3.3	138	181	13.8
Virginia Poly Institute	812	14	7	2	23	2.8	68	91	11.2
U Hawaii	181	1	4	0	5	2.8	151	156	86.2
Ohio State University	902	13	7	0	20	2.2	45	65	7.2
Penn State University	1199	16	10	0	26	2.2	42	68	5.7
Total above 50 schools	23610	1179	1113	44	2336	9.9	3658	5994	25.4
Total all schools	65451	2062	1763	103	3928	6.0	5328	9256	14.1

* Excludes U of Puerto Rico which had 516 graduates. Includes schools that graduated more than 60 Bachelors

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1990, Engineering Manpower Commission

TABLE 7-22

LEADING SCHOOLS* IN PRODUCTION OF BLACK BS GRADUATES, 1990

Ranked by NUMBER of degrees				Ranked by PERCENT of degrees			
SCHOOL	TOTAL	No.	%	SCHOOL	TOTAL	No.	%
Howard University	108	105	97.2	Central State University	5	5	100.0
NC A&T State University	125	100	80.0	Howard University	108	105	97.2
CCNY (City College, CUNY)	338	85	25.1	Hampton University	14	13	92.9
Tuskegee University	92	84	91.3	Tuskegee University	92	84	91.3
Prairie View A&M Univ	112	80	71.4	NC A&T State University	125	100	80.0
Georgia Inst of Tech	1126	68	6.0	Prairie View A&M Univ	112	80	71.4
Southern University	99	62	62.6	Morgan State University	25	17	68.0
Pratt Institute	140	55	39.3	Southern University	99	62	62.6
NC State Univ-Raleigh	1003	54	5.4	Alabama A&M University	4	2	50.0
Tennessee State Univ	121	53	43.8	Tennessee State Univ	121	53	43.8
Mass Inst of Technology	635	30	4.7	U District of Columbia	45	19	42.2
Purdue University	1142	30	2.6	Pratt Institute	140	55	39.3
Mississippi State Univ	349	27	7.7	CCNY (City College, CUNY)	338	85	25.1
U South Carolina	173	27	15.6	FAMU/FSU College of Engrg	108	22	20.4
GMI Engrg & Mgmt Inst	546	25	4.6	U South Carolina	173	27	15.6
Cornell University	600	23	3.8	U Delaware	166	20	12.0
FAMU/FSU College of Engrg	108	22	20.4	U Detroit	88	9	10.2
New Jersey Inst Tech	374	22	5.9	Widener University	119	12	10.1
U Michigan-Ann Arbor	833	21	2.5	Memphis State University	153	13	8.5
Stanford University	287	21	7.3	Brown University	59	5	8.5
U Delaware	166	20	12.0	Florida Intl University	155	13	8.4
U Florida	691	19	2.7	U Alabama-Birmingham	109	9	8.3
Texas A&M University	1019	19	1.9	McNeese State University	25	2	8.0
U District of Columbia	45	19	42.2	U Mississippi	88	7	8.0
Morgan State University	25	17	68.0	U New Orleans	102	8	7.8
U Tennessee-Knoxville	357	17	4.8	Mississippi State Univ	349	27	7.7
Drexel University	547	17	3.1	West Coast University	26	2	7.7
US Naval Academy	384	17	4.4	Stanford University	287	21	7.3
Lawrence Technological U	371	17	4.6	John Brown University	14	1	7.1
U Illinois-Champaign	1316	17	1.3	Tulane University	126	9	7.1
Rensselaer Polytechnic	601	17	2.8	Northwestern University	207	14	6.8
Penn State University	1199	16	1.3	U Alabama	239	16	6.7
U Alabama	239	16	6.7	Vanderbilt University	186	12	6.5
Cal State U-Long Beach	695	16	2.3	Oklahoma State Univ	245	15	6.1
U Texas-Austin	609	16	2.6	Harvard University	66	4	6.1
U Cal-Berkeley	756	16	2.1	Georgia Inst of Tech	1126	68	6.0
Oklahoma State Univ	245	15	6.1	Illinois Inst of Tech	237	14	5.9
Northwestern University	207	14	6.8	New Jersey Inst Tech	374	22	5.9
Polytechnic University	327	14	4.3	Indiana Inst of Tech	17	1	5.9
U Washington	705	14	2.0	Purdue Univ-Calumet	71	4	5.6
Virginia Poly Institute	812	14	1.7	Monmouth College	37	2	5.4
Illinois Inst of Tech	237	14	5.9	Old Dominion University	185	10	5.4
U Maryland-College Park	606	14	2.3	NC State Univ-Raleigh	1003	54	5.4
Hampton University	14	13	92.9	Syracuse University	176	9	5.1
Auburn University	596	13	2.2	U Tennessee-Knoxville	357	17	4.8
Michigan State University	498	13	2.6	Mass Inst of Technology	635	30	4.7
Memphis State University	153	13	8.5	Wayne State University	212	10	4.7
Florida Intl University	155	13	8.4	Lamar University	171	8	4.7
Ohio State University	902	13	1.4	Princeton University	151	7	4.6
Boston University	354	12	3.4	Lawrence Technological U	371	17	4.6
Total Above 50 Schools	23142	1459	6.3	Total Above 50 Schools	9441	1221	12.9
Total All Schools	65967	2062	3.1	Total All Schools	65967	2062	3.1

* With 12 or more black graduates

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1990, Engineering Manpower Commission

TABLE 7-23

LEADING SCHOOLS IN PRODUCTION OF HISPANIC BS GRADUATES, 1990

Ranked by NUMBER of degrees*				Ranked by PERCENT of degrees			
SCHOOL	TOTAL	NO.	%	SCHOOL	TOTAL	No.	%
U Puerto Rico	516	516	100.0	U Southern Colorado	1	1	100.0
Florida Intl University	155	83	53.5	U Puerto Rico	516	516	100.0
U Texas-El Paso	174	63	36.2	Florida Intl University	155	83	53.5
Texas A&M University	1019	58	5.7	Texas A&I University	102	50	49.0
U Florida	691	57	8.2	U Texas-El Paso	174	63	36.2
Mass Inst of Technology	635	53	8.3	John Brown University	14	3	21.4
Texas A&I University	102	50	49.0	U New Mexico	227	45	19.8
U Texas-Austin	609	49	8.0	U Miami	205	36	17.6
Cal State U-Long Beach	695	46	6.6	Cogswell College North	6	1	16.7
U New Mexico	227	45	19.8	U Texas-San Antonio	72	12	16.7
Cal Poly-San Luis Obispo	626	42	6.7	St Marys University	18	3	16.7
U Miami	205	36	17.6	Pratt Institute	140	19	13.6
CCNY (City College, CUNY)	338	35	10.4	Southern Methodist Univ	89	11	12.4
New Jersey Inst Tech	374	31	8.3	Cal State U-Los Angeles	153	17	11.1
U Cal-Los Angeles	329	31	9.4	CCNY (City College, CUNY)	338	35	10.4
U South Florida	359	30	8.4	Phila Coll of Textiles	10	1	10.0
Georgia Inst of Tech	1126	29	2.6	NM State University	215	21	9.8
U Illinois-Champaign	1316	26	2.0	Florida Institute of Tech	158	15	9.5
Rensselaer Polytechnic	601	24	4.0	U Cal-Los Angeles	329	31	9.4
U Arizona	451	24	5.3	U Detroit	88	8	9.1
Cornell University	600	24	4.0	U New Orleans	102	9	8.8
San Diego State Univ	308	24	7.8	U South Florida	359	30	8.4
U Illinois-Chicago	379	23	6.1	Mass Inst of Technology	635	53	8.3
U Cal-Berkeley	756	23	3.0	Trinity University	12	1	8.3
U Cal-Santa Barbara	275	21	7.6	Baylor University	24	2	8.3
U Cal-San Diego	401	21	5.2	NM Inst of Mining & Tech	48	4	8.3
NM State University	215	21	9.8	New Jersey Inst Tech	374	31	8.3
Texas Tech University	300	20	6.7	U Florida	691	57	8.2
Stanford University	287	20	7.0	U Texas-Austin	609	49	8.0
U Maryland-College Park	606	19	3.1	Loyola Marymount Univ	64	5	7.8
Purdue University	1142	19	1.7	San Diego State Univ	308	24	7.8
Pratt Institute	140	19	13.6	US International Univ	13	1	7.7
Cal State U-Los Angeles	153	17	11.1	U Cal-Santa Barbara	275	21	7.6
Arizona State University	397	17	4.3	Hampton University	14	1	7.1
U Washington	705	16	2.3	Stanford University	287	20	7.0
U Colorado-Boulder	442	15	3.4	Cal Poly-San Luis Obispo	626	42	6.7
Florida Institute of Tech	158	15	9.5	Texas Tech University	300	20	6.7
US Naval Academy	384	14	3.6	Cal State U-Long Beach	695	46	6.6
U Southern California	330	14	4.2	Tulane University	126	8	6.3
Marquette University	330	13	3.9	Catholic Univ of America	64	4	6.3
U Texas-San Antonio	72	12	16.7	U Illinois-Chicago	379	23	6.1
Manhattan College	235	12	5.1	Fairleigh Dickinson Univ	119	7	5.9
Southern Methodist Univ	89	11	12.4	Texas A&M University	1019	58	5.7
US Military Academy	289	11	3.8	U Arizona	451	24	5.3
Polytechnic University	327	11	3.4	Cal State U-Fullerton	188	10	5.3
U Massachusetts-Amherst	372	11	3.0	U Cal-San Diego	401	21	5.2
Cal State U-Fullerton	188	10	5.3	Manhattan College	235	12	5.1
Penn State University	1199	10	0.8	FAMU/FSU College of Engrg	108	5	4.6
U Michigan-Ann Arbor	833	10	1.2	U Idaho	153	7	4.6
Rutgers University	481	10	2.1	Rice University	175	8	4.6
Total above 50 Schools	22941	1811	7.9	Total Above 50 Schools	11864	1574	13.3
Total All Schools	65967	2279	3.5	Total All Schools	65967	2279	3.5

*With 10 of more Hispanic graduates

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1990, Engineering Manpower Commission

TABLE 7-24

LEADING SCHOOLS IN PRODUCTION OF ASIAN BS GRADUATES, 1990

Ranked by NUMBER of degrees*				Ranked by PERCENT of degrees			
SCHOOL	TOTAL	No.	%	SCHOOL	TOTAL	No.	%
U Cal-Berkeley	756	335	44.3	U Hawaii	181	151	83.4
Cal State U-Long Beach	695	198	28.5	Cal State U-Los Angeles	153	81	52.9
U Washington	705	166	23.5	Alabama A&M University	4	2	50.0
U Hawaii	181	151	83.4	U Cal-Irvine	180	90	50.0
San Jose State University	382	142	37.2	U Cal-Berkeley	756	335	44.3
U Illinois-Champaign	1316	138	10.5	Cal State U-Fullerton	188	81	43.1
U Cal-Los Angeles	329	138	41.9	U Cal-Los Angeles	329	138	41.9
Mass Inst of Technology	635	122	19.2	San Jose State University	382	142	37.2
CCNY (City College, CUNY)	338	112	33.1	U Cal-Santa Cruz	59	20	33.9
U Cal-San Diego	401	105	26.2	Cogswell College North	6	2	33.3
U Southern California	330	102	30.9	U Wisconsin-Parkside	3	1	33.3
Cornell University	600	102	17.0	CCNY (City College, CUNY)	338	112	33.1
Polytechnic University	327	98	30.0	Columbia University	222	73	32.9
Cal Poly-San Luis Obispo	626	98	15.7	SUNY-Stony Brook Campus	185	58	31.4
U Maryland-College Park	606	93	15.3	U Southern California	330	102	30.9
U Cal-Irvine	180	90	50.0	U Houston	199	61	30.7
Rutgers University	481	85	17.7	Polytechnic University	327	98	30.0
Cal State U-Fullerton	188	81	43.1	Monmouth College	37	11	29.7
Cal State U-Los Angeles	153	81	52.9	Seattle Pacific Univ	7	2	28.6
Columbia University	222	73	32.9	Cal State U-Long Beach	695	198	28.5
Georgia Inst of Tech	1126	72	6.4	Harvey Mudd College	57	16	28.1
Virginia Poly Institute	812	68	8.4	Cooper Union	109	30	27.5
U Texas-Austin	609	68	11.2	U Cal-San Diego	401	105	26.2
San Diego State Univ	308	67	21.8	U Redlands	8	2	25.0
U Michigan-Ann Arbor	833	67	8.0	Wentworth Inst of Tech	25	6	24.0
U Cal-Santa Barbara	275	65	23.6	U Cal-Santa Barbara	275	65	23.6
U Houston	199	61	30.7	U Washington	705	166	23.5
SUNY-Stony Brook Campus	185	58	31.4	Harvard University	66	15	22.7
Texas A&M University	1019	57	5.6	Santa Clara University	137	30	21.9
Rensselaer Polytechnic	601	55	9.2	San Diego State Univ	308	67	21.8
NC State Univ-Raleigh	1003	54	5.4	Wichita State University	174	35	20.1
Drexel University	547	52	9.5	Temple University	65	13	20.0
Stanford University	287	50	17.4	Mass Inst of Technology	635	122	19.2
New Jersey Inst Tech	374	49	13.1	Loyola Marymount Univ	64	12	18.8
Boston University	354	49	13.8	Rutgers University	481	85	17.7
Ohio State University	902	45	5.0	U Nevada-Las Vegas	40	7	17.5
Penn State University	1199	42	3.5	Stanford University	287	50	17.4
U Florida	691	41	5.9	Portland State Univ	202	35	17.3
U Colorado-Boulder	442	39	8.8	Northrop University	58	10	17.2
SUNY-Buffalo Campus	459	39	8.5	Cornell University	600	102	17.0
Purdue University	1142	37	3.2	U New Orleans	102	17	16.7
Wichita State University	174	35	20.1	U Texas-San Antonio	72	12	16.7
Portland State Univ	202	35	17.3	U Denver	6	1	16.7
Illinois Inst of Tech	237	35	14.8	Pratt Institute	140	22	15.7
Arizona State University	397	33	8.3	U Colorado-Denver	166	26	15.7
Northwestern University	207	32	15.5	Cal Poly-San Luis Obispo	626	98	15.7
Santa Clara University	137	30	21.9	Northwestern University	207	32	15.5
Cooper Union	109	30	27.5	U Maryland-College Park	606	93	15.3
Oregon State University	330	29	8.8	Brown University	59	9	15.3
Washington State Univ	294	29	9.9	Illinois Inst of Tech	237	35	14.8
Total Above 50 Schools	24905	3933	15.8	Total Above 50 Schools	11499	3076	26.8
Total All Schools	65967	5328	8.1	Total All Schools	65967	5328	8.1

* With 29 or more asian graduates

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1990, Engineering Manpower Commission

TABLE 7-25

LEADING SCHOOLS* IN NUMBER OF FOREIGN NATIONAL ENGINEERING DEGREES, 1990

SCHOOL	Bachelors#			Masters			PhDs			All Degrees		
	Total	Foreign	%F	Total	Foreign	%F	Total	Foreign	%F	Total	Foreign	%F
U Southern California	330	109	33.0	649	211	32.5	89	57	64.0	1068	377	35.3
Stanford University	287	27	9.4	823	214	26.0	193	81	42.0	1303	322	24.7
U Michigan-Ann Arbor	833	27	3.2	496	189	38.1	141	96	68.1	1470	312	21.2
U Texas-Austin	609	70	11.5	399	178	44.6	132	56	42.4	1140	304	26.7
Mass Inst of Technology	635	50	7.9	584	151	25.9	255	99	38.8	1474	300	20.4
New Jersey Inst Tech	374	22	5.9	359	225	62.7	7	6	85.7	740	253	34.2
Ohio State University	902	59	6.5	282	121	42.9	98	61	62.2	1282	241	18.8
Purdue University	1142	51	4.5	411	107	26.0	154	80	51.9	1707	238	13.9
U Cal-Berkeley	756	23	3.0	380	92	24.2	201	104	51.7	1337	219	16.4
U Arizona	451	117	25.9	184	56	30.4	62	44	71.0	697	217	31.1
U Wisconsin-Madison	635	55	8.7	232	109	47.0	78	41	52.6	945	205	21.7
Arizona State University	397	59	14.9	230	106	46.1	33	23	69.7	660	188	28.5
Syracuse University	176	23	13.1	199	135	67.8	26	21	80.8	401	179	44.6
Texas A&M University	1019	57	5.6	321	77	24.0	83	36	43.4	1423	170	11.9
Georgia Inst of Tech	1126	35	3.1	473	94	19.9	81	41	50.6	1680	170	10.1
Virginia Poly Institute	812	16	2.0	345	113	32.8	83	38	45.8	1240	167	13.5
U Maryland-College Park	606	45	7.4	223	83	37.2	70	39	55.7	899	167	18.6
Iowa State University	695	62	8.9	158	78	49.4	41	25	61.0	894	165	18.5
Michigan State University	498	27	5.4	164	99	60.4	55	39	70.9	717	165	23.0
CCNY (City College, CUNY)	338	51	15.1	169	103	60.9	10	5	50.0	517	159	30.8
Penn State University	1199	15	1.3	399	85	21.3	102	59	57.8	1700	159	9.4
SUNY-Buffalo Campus	459	41	8.9	176	81	46.0	43	31	72.1	678	153	22.6
U Florida	691	23	3.3	251	79	31.5	83	50	60.2	1025	152	14.8
U Oklahoma	304	58	19.1	129	78	60.5	23	13	56.5	456	149	32.7
U Missouri-Columbia & KC	414	36	8.7	145	93	64.1	21	14	66.7	580	143	24.7
Polytechnic University	327	24	7.3	416	95	22.8	46	24	52.2	789	143	18.1
U Illinois-Champaign	1316	15	1.1	538	75	13.9	227	50	22.0	2081	140	6.7
NC State Univ-Raleigh	1003	39	3.9	254	67	26.4	79	34	43.0	1336	140	10.5
Case Western Reserve Univ	274	58	21.2	135	50	37.0	49	31	63.3	458	139	30.3
Boston University	354	79	22.3	190	60	31.6	0	0	0.0	544	139	25.6
Columbia University	222	32	14.4	232	70	30.2	72	36	50.0	526	138	26.2
Northwestern University	207	8	3.9	181	77	42.5	90	53	58.9	478	138	28.9
Northrop University, Cal.	58	49	84.5	104	89	85.6	0	0	0.0	162	138	85.2
U Miami	205	99	48.3	54	30	55.6	11	8	72.7	270	137	50.7
U Colorado-Boulder	442	21	4.8	336	93	27.7	57	23	40.4	835	137	16.4
U Toledo	271	94	34.7	63	35	55.6	11	5	45.5	345	134	38.8
U Cal-Los Angeles	329	12	3.6	183	71	38.8	114	49	43.0	626	132	21.1
Lamar University	171	75	43.9	62	46	74.2	1	0	0.0	234	121	51.7
Rutgers University	481	19	4.0	154	74	48.1	41	24	58.5	676	117	17.3
U Washington	705	24	3.4	292	57	19.5	63	31	49.2	1060	112	10.6
Cal Inst of Technology	117	20	17.1	121	56	46.3	65	35	53.8	303	111	36.6
U Iowa	227	20	8.8	94	56	59.6	38	32	84.2	359	108	30.1
Cal State U-Long Beach	695	89	12.8	112	19	17.0	0	0	0.0	807	108	13.4
SUNY-Stony Brook Campus	185	16	8.6	93	76	81.7	20	14	70.0	298	106	35.6
Rensselaer Polytechnic	601	20	3.3	252	55	21.8	66	30	45.5	919	105	11.4
Washington University	238	37	15.5	167	51	30.5	33	17	51.5	438	105	24.0
Illinois Inst of Tech	237	22	9.3	142	55	38.7	38	27	71.1	417	104	24.9
U Pennsylvania	257	44	17.1	145	40	27.6	58	19	32.8	460	103	22.4
U Kansas	291	38	13.1	102	54	52.9	17	9	52.9	410	101	24.6
U Utah	224	25	11.2	102	55	53.9	36	20	55.6	362	100	27.6
U Texas-El Paso	174	61	35.1	52	39	75.0	0	0	0.0	226	100	44.2
TOTAL ABOVE 51 SCHOOL	25299	2198	8.7	12757	4502	35.3	3396	1730	50.9	41452	8430	20.3
TOTAL ALL SCHOOLS	63993	4775	7.5	26150	7201	27.5	5335	2448	45.9	95478	14424	15.1

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1990, Engineering Manpower Commission

TABLE 7-26

LEADING SCHOOLS* IN PERCENT OF FOREIGN NATIONAL ENGINEERING DEGREES, 1990

SCHOOL	Bachelors+			Masters			PhDs			All Degrees		
	Total	Foreign	%F	Total	Foreign	%F	Total	Foreign	%F	Total	Foreign	%F
Northrop University, Cal.	58	49	84.5	104	89	85.6	0	0	0.0	162	138	85.2
Lamar University	171	75	43.9	62	46	74.2	1	0	0.0	234	121	51.7
U Miami	205	99	48.3	54	30	55.6	11	8	72.7	270	137	50.7
Syracuse University	176	23	13.1	199	135	67.8	26	21	80.8	401	179	44.6
U Texas-El Paso	174	61	35.1	52	39	75.0	0	0	0.0	226	100	44.2
U Toledo	271	94	34.7	63	35	55.6	11	5	45.5	345	134	38.8
Cal Inst of Technology	117	20	17.1	121	56	46.3	65	35	53.8	303	111	36.6
SUNY-Stony Brook Campus	185	16	8.6	93	76	81.7	20	14	70.0	298	106	35.6
U Southern California	330	109	33.0	649	211	32.5	89	57	64.0	1068	377	35.3
New Jersey Inst Tech	374	22	5.9	359	225	62.7	7	6	85.7	740	253	34.2
U Oklahoma	304	58	19.1	129	78	60.5	23	13	56.5	456	149	32.7
U Arizona	451	117	25.9	184	56	30.4	62	44	71.0	697	217	31.1
CCNY (City College, CUNY)	338	51	15.1	169	103	60.9	10	5	50.0	517	159	30.8
Case Western Reserve Univ	274	58	21.2	135	50	37.0	49	31	63.3	458	139	30.3
U Iowa	227	20	8.8	94	56	59.6	38	32	84.2	359	108	30.1
Northwestern University	207	8	3.9	181	77	42.5	90	53	58.9	478	138	28.9
Arizona State University	397	59	14.9	230	106	46.1	33	23	69.7	660	188	28.5
U Utah	224	25	11.2	102	55	53.9	36	20	55.6	362	100	27.6
U Texas-Austin	609	70	11.5	399	178	44.6	132	56	42.4	1140	304	26.7
Columbia University	222	32	14.4	232	70	30.2	72	36	50.0	526	138	26.2
Boston University	354	79	22.3	190	60	31.6	0	0	0.0	544	139	25.6
Illinois Inst of Tech	237	22	9.3	142	55	38.7	38	27	71.1	417	104	24.9
Stanford University	287	27	9.4	823	214	26.0	193	81	42.0	1303	322	24.7
U Missouri-Columbia & KC	414	36	8.7	145	93	64.1	21	14	66.7	580	143	24.7
U Kansas	291	38	13.1	102	54	52.9	17	9	52.9	410	101	24.6
Washington University	238	37	15.5	167	51	30.5	33	17	51.5	438	105	24.0
Michigan State University	498	27	5.4	164	99	60.4	55	39	70.9	717	165	23.0
SUNY-Buffalo Campus	459	41	8.9	176	81	46.0	43	31	72.1	678	153	22.6
U Pennsylvania	257	44	17.1	145	40	27.6	58	19	32.8	460	103	22.4
U Wisconsin-Madison	635	55	8.7	232	109	47.0	78	41	52.6	945	205	21.7
U Michigan-Ann Arbor	833	27	3.2	496	189	38.1	141	96	68.1	1470	312	21.2
U Cal-Los Angeles	329	12	3.6	183	71	38.8	114	49	43.0	626	132	21.1
Mass Inst of Technology	635	50	7.9	584	151	25.9	255	99	38.8	1474	300	20.4
Ohio State University	902	59	6.5	282	121	42.9	98	61	62.2	1282	241	18.8
U Maryland-College Park	606	45	7.4	223	83	37.2	70	39	55.7	899	167	18.6
Iowa State University	695	62	8.9	158	78	49.4	41	25	61.0	894	165	18.5
Polytechnic University	327	24	7.3	416	95	22.8	46	24	52.2	789	143	18.1
Rutgers University	481	19	4.0	154	74	48.1	41	24	58.5	676	117	17.3
U Colorado-Boulder	442	21	4.8	336	93	27.7	57	23	40.4	835	137	16.4
U Cal-Berkeley	756	23	3.0	380	92	24.2	201	104	51.7	1337	219	16.4
U Florida	691	23	3.3	251	79	31.5	83	50	60.2	1025	152	14.8
Purdue University	1142	51	4.5	411	107	26.0	154	80	51.9	1707	238	13.9
Virginia Poly Institute	812	16	2.0	345	113	32.8	83	38	45.8	1240	167	13.5
Cal State U-Long Beach	695	89	12.8	112	19	17.0	0	0	0.0	807	108	13.4
Texas A&M University	1019	57	5.6	321	77	24.0	83	36	43.4	1423	170	11.9
Rensselaer Polytechnic	601	20	3.3	252	55	21.8	66	30	45.5	919	105	11.4
U Washington	705	24	3.4	292	57	19.5	63	31	49.2	1060	112	10.6
NC State Univ-Raleigh	1003	39	3.9	254	67	26.4	79	34	43.0	1336	140	10.5
Georgia Inst of Tech	1126	35	3.1	473	94	19.9	81	41	50.6	1680	170	10.1
Penn State University	1199	15	1.3	399	85	21.3	102	59	57.8	1700	159	9.4
U Illinois-Champaign	1316	15	1.1	538	75	13.9	227	50	22.0	2081	140	6.7
TOTAL ABOVE 51 SCHOOL	25299	2198	8.7	12757	4502	35.3	3396	1730	50.9	41452	8430	20.3
TOTAL ALL SCHOOLS	63993	4775	7.5	26150	7201	27.5	5335	2448	45.9	95478	14424	15.1

+ Includes Professional Engineer Degrees. * Of those that graduated 100 or more in all degrees.

Field: Engineering

Source: Digest of Education Statistics 1977–1989; Fall Enrollment in Colleges and Universites, 1989, National Center for Education Statistics, Engineering Enrollment Series, Fall 1970–89, Engineering Manpower Commission

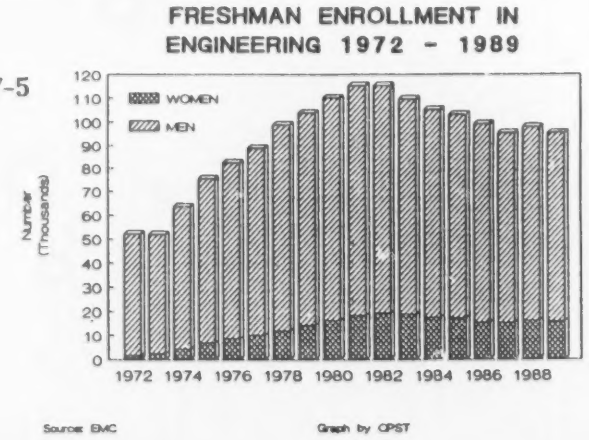
TABLE 7-27

ENGINEERING ENROLLMENTS RELATED TO HIGH SCHOOL GRADUATES, ENTERING FRESHMEN AND TOTAL ENROLLMENTS, BY SEX, SELECTED YEARS
1970 – 1989

YEAR	H.S. GRADUATES			FIRST TIME ENROLLMENT						TOTAL ENROLLMENT						% of H.S.Grads Enrolled in College the Next October			Engineering as % of First Time Enrollment			Engineering as % of Total Enrollment		
				All Fields			Engineering			All Fields			Engineering												
	Men	Women	%W	Men	Wom	%W	Men	Wom	%W	Men	Wom	%W	Men	Wom	%W	Men	Wom	Both	Men	Wom	Both	Men	Wom	Both
1970	1,433	1,463	50.5	984	796	44.7	70.2	1.5	2.0	5,044	3,497	40.9	314.3	4.7	1.5	55.2	48.5	51.8	7.1	0.2	4.0	6.2	0.1	3.7
1973	1,602	1,609	50.1	931	826	47.0	49.5	2.4	4.7	5,371	4,231	44.1	255.3	7.7	2.9	50.1	43.4	49.6	5.3	0.3	3.0	4.8	0.2	2.7
1975	1,541	1,599	50.9	992	918	48.1	68.6	6.7	8.9	6,149	5,036	45.0	293.0	19.9	6.4	52.6	49.0	50.7	6.9	0.7	3.9	4.8	0.4	2.8
1977	1,548	1,606	50.9	1,172	1,259	51.8	78.9	9.9	11.2	5,789	5,497	48.7	340.3	33.9	9.1	52.2	49.3	50.6	6.7	0.8	3.7	5.9	0.6	3.3
1979	1,532	1,602	51.1	1,195	1,344	52.9	89.7	14.0	13.5	5,683	5,887	50.9	383.9	49.6	11.4	50.5	48.4	49.3	7.5	1.0	4.1	6.8	0.8	3.7
1980	1,355	1,401	50.8	1,233	1,392	53.0	94.1	16.0	14.5	5,874	6,223	51.4	411.7	58.2	12.4	46.7	51.8	49.3	7.6	1.2	4.2	7.0	0.9	3.9
1981	1,340	1,385	50.8	1,218	1,378	53.1	97.0	18.3	15.9	5,975	6,397	51.7	431.2	66.8	13.4	54.8	53.1	53.9	8.0	1.3	4.4	7.2	1.0	4.0
1982	1,474	1,527	50.9	1,199	1,306	52.1	96.1	19.2	16.6	5,981	6,377	51.6	441.9	75.4	14.6	49.0	52.1	50.6	8.0	1.5	4.6	7.4	1.2	4.2
1983	1,451	1,465	50.2	1,159	1,285	52.6	90.9	18.7	17.0	6,024	6,441	51.7	452.8	79.4	14.9	51.9	53.4	52.7	7.8	1.5	4.5	7.5	1.2	4.3
1985	1,429	1,583	52.6	1,112	1,245	52.8	87.9	17.4	16.5	5,864	6,378	52.1	444.9	77.7	14.9	56.0	54.5	55.2	7.9	1.4	4.5	7.6	1.2	4.3
1986	1,286	1,380	51.8	1,076	1,216	53.1	86.2	17.0	16.5	5,818	6,429	52.5	438.3	78.1	15.1	58.6	56.9	57.7	8.0	1.4	4.5	7.5	1.2	4.2
1987	1,331	1,455	52.2	1,045	1,169	52.8	84.1	15.2	15.3	5,885	6,615	52.9	428.9	74.2	14.7	55.9	51.9	53.9	8.0	1.3	4.5	7.3	1.1	4.0
1988	1,189	1,304	52.3	1,047	1,200	53.4	82.2	15.8	16.2	5,881	6,663	53.1	421.7	75.7	15.2	56.4	55.3	55.8	7.8	1.3	4.4	7.2	1.1	4.0
1989	1,208	1,245	50.8				79.9	15.5	16.3	5,932	6,836	53.5	416.3	76.0	15.4	57.6	61.6	59.6				7.0	1.1	3.9

Note: All data except for percentages are in thousands.

CHART 7-5



FIELD: Engineering
SOURCE: Engineering and Technology Enrollments, 1975 through 1989, Engineering Manpower Commission

TABLE 7-28

NUMBER AND PERCENT OF WOMEN, MINORITIES AND FOREIGN NATIONALS ENROLLED IN ENGINEERING BY DEGREE LEVEL, FALL 1975 – 1989

	FULL TIME UNDERGRADUATE STUDENTS												GRADUATE STUDENTS			
YEAR (Fall)	First Year		Second Year		Third Year		4&5th Year		Total		Part Time		Full Time		Part Time	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
ALL STUDENTS																
1975	75,343	100	55,891	100	49,338	100	50,807	100	231,379	100	17,041	100	37,285	100	21,173	100
1976	82,250	100	63,003	100	56,835	100	55,747	100	257,835	100	19,844	100	36,479	100	26,842	100
1977	88,780	100	70,326	100	64,721	100	65,421	100	289,248	100	20,634	100	39,235	100	25,055	100
1978	98,805	100	72,150	100	69,816	100	73,466	100	314,237	100	22,843	100	38,381	100	24,133	100
1979	103,724	100	78,594	100	74,928	100	83,242	100	340,488	100	25,811	100	41,384	100	25,768	100
1980	110,149	100	84,982	100	80,024	100	89,962	100	365,117	100	32,227	100	44,335	100	23,250	100
1981	115,280	100	87,519	100	86,633	100	98,145	100	387,577	100	32,825	100	47,772	100	29,818	100
1982	115,303	100	89,785	100	90,541	100	107,761	100	403,390	100	31,940	100	50,410	100	31,589	100
1983	109,638	100	89,515	100	91,233	100	115,758	100	406,144	100	35,061	100	57,366	100	33,674	100
1984	105,249	100	83,946	100	85,509	100	115,931	100	390,635	100	34,864	100	57,277	100	35,888	100
1985	103,225	100	79,627	100	84,875	100	116,464	100	384,191	100	36,672	100	60,641	100	34,864	100
1986	99,238	100	76,195	100	80,386	100	113,701	100	369,520	100	38,137	100	67,333	100	39,863	100
1987	95,453	100	73,317	100	77,085	100	111,143	100	356,998	100	35,200	100	69,343	100	41,435	100
1988	98,009	100	71,030	100	73,761	100	103,369	100	346,169	100	39,243	100	69,226	100	42,781	100
1989	95,420	100	71,267	100	70,483	100	101,359	100	338,529	100	39,748	100	68,967	100	45,081	100
WOMEN																
1975	6,730	8.9	4,197	7.5	2,862	5.8	2,063	4.1	15,852	6.9	1,628	9.6	1,585	4.3	858	4.1
1976	8,545	10.4	5,848	9.3	4,407	7.8	3,136	5.6	21,936	8.5	1,258	6.3	1,693	4.6	1,083	4.0
1977	9,921	11.2	7,537	10.7	6,193	9.6	5,122	7.8	28,773	9.9	1,192	5.8	2,661	6.8	1,291	5.2
1978	11,789	11.9	8,447	11.7	7,453	10.7	6,829	9.3	34,518	11.0	1,414	6.2	2,930	7.6	1,294	5.4
1979	14,031	13.5	10,400	13.2	8,853	11.8	8,743	10.5	42,027	12.3	2,404	9.3	3,409	8.2	1,735	6.7
1980	16,004	14.5	12,094	14.2	10,269	12.8	10,577	11.8	48,944	13.4	2,918	9.1	4,014	9.1	2,344	10.1
1981	18,238	15.8	13,285	15.2	12,023	13.9	12,503	12.7	56,049	14.5	3,220	9.8	4,627	9.7	2,894	9.7
1982	19,155	16.6	14,704	16.4	13,561	15.0	14,908	13.8	62,328	15.5	4,250	13.3	5,585	11.1	3,250	10.3
1983	18,689	17.0	15,143	16.9	14,019	15.4	16,798	14.5	64,649	15.9	4,182	11.9	6,506	11.3	4,104	12.2
1984	17,356	16.5	14,264	17.0	13,897	16.3	17,142	14.8	62,659	16.0	4,040	11.6	6,761	11.8	4,256	11.9
1985	17,037	16.5	13,288	16.7	13,523	15.9	17,754	15.2	61,602	16.0	4,650	12.7	7,401	12.2	4,443	12.7
1986	15,155	15.3	12,581	16.5	12,445	15.5	17,431	15.3	57,612	15.6	5,046	13.2	8,557	12.7	5,357	13.4
1987	15,004	15.7	11,820	16.1	11,775	15.3	16,872	15.2	55,471	15.5	4,810	13.7	8,079	11.7	5,836	14.1
1988	15,837	16.2	11,465	16.1	11,356	15.4	16,114	15.6	54,772	15.8	5,616	14.3	8,773	12.7	6,545	15.3
1989	15,532	15.8	11,917	16.8	11,133	15.1	15,956	15.4	54,538	15.8	5,672	14.5	9,106	13.2	6,738	15.7
BLACKS																
1975	3,840	5.1	1,980	3.5	1,366	2.8	1,203	2.4	8,389	3.6	658	3.9	390	1.0	361	1.7
1976	4,372	5.3	2,483	3.9	1,633	2.9	1,340	2.4	9,828	3.8	632	3.2	427	1.2	332	1.2
1977	4,728	5.3	2,928	4.2	2,104	3.3	1,628	2.5	11,388	3.9	613	3.0	438	1.1	487	1.9
1978	5,493	5.6	3,103	4.3	2,330	3.3	2,028	2.8	12,954	4.1	726	3.2	450	1.2	393	1.6
1979	6,339	6.1	3,451	4.4	2,687	3.6	2,309	2.8	14,786	4.3	1,056	4.1	480	1.2	348	1.4
1980	6,661	6.0	3,963	4.7	2,903	3.6	2,654	3.0	16,181	4.4	1,425	4.4	588	1.3	399	1.7
1981	7,015	6.1	4,398	5.0	3,290	3.8	2,908	3.0	17,611	4.5	1,300	4.0	553	1.2	506	1.7
1982	6,715	5.8	4,436	4.9	3,261	3.6	3,186	3.0	17,598	4.4	1,794	5.6	634	1.3	503	1.6
1983	6,342	5.8	4,314	4.8	3,487	3.8	3,674	3.2	17,817	4.4	1,881	5.4	803	1.4	673	2.0
1984	6,245	5.9	4,084	4.9	3,461	4.0	3,661	3.2	17,451	4.5	1,753	5.0	793	1.4	606	1.7
1985	6,374	6.2	3,942	5.0	3,604	4.2	4,074	3.5	17,994	4.7	1,825	5.0	845	1.4	578	1.7
1986	5,873	5.9	3,720	4.9	3,331	4.1	3,906	3.4	16,830	4.6	1,629	4.3	674	1.3	748	1.9
1987	6,145	6.4	3,777	5.2	3,298	4.3	4,080	3.7	17,300	4.8	1,842	5.2	791	1.1	888	2.1
1988	7,075	7.2	3,911	5.5	3,357	4.6	3,884	3.8	18,227	5.3	2,178	5.6	866	1.3	899	2.1
1989	7,284	7.4	4,269	6.0	3,338	4.5	4,048	3.9	18,939	5.5	2,074	5.3	992	1.4	828	1.9

TABLE 7-28 (continued)

YEAR (Fall)	FULL TIME UNDERGRADUATE STUDENTS: First Year No.	%	Second Year No.	%	Third Year No.	%	4&5th Year No.	%	Total No.	%	Part Time No.	%	GRADUATE STUDENTS: Full Time No.	%	Part Time No.	%
HISPANICS*																
1978	3,296	3.3	2,078	2.9	1,930	2.8	2,527	3.4	9,831	3.1	570	2.5	426	1.1	312	1.3
1979	3,768	3.6	2,354	3.0	2,230	3.0	2,775	3.3	11,127	3.3	941	3.6	472	1.1	381	1.5
1980	4,208	3.8	2,543	3.0	2,282	2.9	2,827	3.1	11,860	3.2	1,045	3.2	476	1.1	403	1.7
1981	4,768	4.1	2,976	3.4	2,598	3.0	3,273	3.3	13,615	3.5	744	2.3	595	1.2	408	1.4
1982	4,421	3.8	3,106	3.5	2,928	3.2	3,580	3.3	14,035	3.5	1,141	3.6	564	1.1	400	1.3
1983	4,760	4.3	3,251	3.6	3,113	3.4	4,058	3.5	15,182	3.7	1,280	3.7	731	1.3	510	1.5
1984	4,814	4.6	3,290	3.9	3,335	3.9	4,346	3.7	15,785	4.0	1,300	3.7	764	1.3	548	1.5
1985	4,789	4.6	3,500	4.4	3,527	4.2	5,484	4.7	17,300	4.5	1,298	3.5	1,058	1.7	644	1.8
1986	4,299	4.3	3,221	4.2	3,389	4.2	5,363	4.7	16,272	4.4	1,314	3.4	980	1.5	622	1.6
1987	4,465	4.7	3,424	4.7	3,396	4.4	5,846	5.3	17,131	4.8	1,122	3.2	1,132	1.6	700	1.7
1988	4,872	5.0	3,221	4.5	3,315	4.5	5,619	5.4	17,027	4.9	1,673	4.3	1,062	1.5	697	1.6
1989	5,228	5.3	3,293	4.6	3,251	4.4	5,795	5.6	17,567	5.1	1,440	3.7	1,122	1.6	770	1.8
ASIAN AMERICANS																
1978	2,169	2.2	2,006	2.8	2,200	3.2	2,265	3.1	8,640	2.7	377	1.7	1,533	4.0	973	4.0
1979	3,133	3.0	2,578	3.3	2,800	3.7	2,966	3.6	11,477	3.4	772	3.0	1,603	3.9	1,033	4.0
1980	2,889	2.6	2,791	3.3	2,746	3.4	3,253	3.6	11,679	3.2	1,093	3.4	1,657	3.7	1,453	6.2
1981	4,035	3.5	3,247	3.7	3,381	3.9	3,799	3.9	14,462	3.7	1,353	4.1	2,217	4.6	1,591	5.3
1982	4,098	3.6	3,492	3.9	3,800	4.2	4,299	4.0	15,689	3.9	1,562	4.9	2,531	5.0	1,434	4.5
1983	4,983	4.5	4,452	5.0	5,201	5.7	6,046	5.2	20,682	5.1	2,325	6.6	3,636	6.3	2,333	6.9
1984	5,614	5.3	4,901	5.8	5,951	7.0	7,147	6.2	23,613	6.0	1,836	5.3	3,280	5.7	2,322	6.5
1985	6,566	6.4	5,233	6.6	6,336	7.5	8,403	7.2	26,538	6.9	2,229	6.1	4,166	6.9	2,456	7.0
1986	6,459	6.5	5,365	7.0	6,462	8.0	8,726	7.7	27,012	7.3	3,189	8.4	3,997	5.9	3,234	8.1
1987	7,074	7.4	6,015	8.2	6,984	9.1	10,057	9.0	30,130	8.4	2,665	7.6	4,315	6.2	3,590	8.7
1988	7,510	7.7	6,174	8.7	7,101	9.6	9,567	9.3	30,352	8.8	3,699	9.4	4,664	6.7	3,645	8.5
1989	7,669	7.8	6,342	8.9	7,089	9.6	9,703	9.4	30,803	8.9	2,557	6.5	4,404	6.4	3,690	8.6
AMERICAN INDIANS																
1978	225	0.2	161	0.2	121	0.2	118	0.2	625	0.2	59	0.3	34	0.1	31	0.1
1979	317	0.3	146	0.2	152	0.2	144	0.2	759	0.2	60	0.2	57	0.1	17	0.1
1980	365	0.3	187	0.2	174	0.2	177	0.2	903	0.2	117	0.4	45	0.1	63	0.3
1981	412	0.4	189	0.2	176	0.2	193	0.2	970	0.3	113	0.3	42	0.1	53	0.2
1982	371	0.3	266	0.3	205	0.2	236	0.2	1,078	0.3	145	0.5	89	0.2	64	0.2
1983	376	0.3	239	0.3	236	0.3	276	0.2	1,127	0.3	145	0.4	53	0.1	60	0.2
1984	410	0.4	241	0.3	232	0.3	303	0.3	1,186	0.3	92	0.3	73	0.1	51	0.1
1985	365	0.4	246	0.3	221	0.3	288	0.2	1,120	0.3	120	0.3	72	0.1	54	0.2
1986	353	0.4	201	0.3	216	0.3	301	0.3	1,071	0.3	124	0.3	71	0.1	52	0.1
1987	354	0.4	215	0.3	228	0.3	353	0.3	1,150	0.3	109	0.3	91	0.1	56	0.1
1988	433	0.4	209	0.3	212	0.3	310	0.3	1,164	0.3	120	0.3	101	0.1	70	0.2
1989	424	0.4	270	0.4	199	0.3	312	0.3	1,205	0.3	113	0.3	99	0.1	71	0.2
FOREIGN NATIONALS																
1979	4,984	4.8	4,771	6.1	5,583	7.5	6,298	7.6	21,636	6.4	1,125	4.4	14,061	34.0	1,555	6.0
1980	5,095	4.6	5,436	6.4	6,496	8.1	7,627	8.5	24,654	6.8	1,474	4.6	16,120	36.4	2,690	11.6
1981	4,974	4.3	5,611	6.4	6,831	7.9	7,951	8.1	25,367	6.5	1,218	3.7	17,985	37.6	2,577	8.6
1982	4,925	4.3	5,148	5.7	6,176	6.8	7,358	6.8	23,607	5.9	1,443	4.5	17,651	35.0	2,670	8.5
1983	5,234	4.8	5,161	5.8	6,194	6.8	8,394	7.3	24,983	6.2	1,454	4.1	20,110	35.1	3,530	10.5
1984	4,850	4.6	5,478	6.5	6,211	7.3	8,275	7.1	24,814	6.4	1,305	3.7	20,294	35.4	3,579	10.0
1985	5,282	5.1	5,553	7.0	6,756	8.0	9,464	8.1	27,055	7.0	1,536	4.2	21,953	36.2	3,622	10.4
1986	4,154	4.2	4,864	6.4	5,586	6.9	8,143	7.2	22,747	6.2	1,608	4.2	24,864	36.9	4,437	11.1
1987	3,930	4.1	4,402	6.0	5,638	7.3	8,263	7.4	22,233	6.2	1,781	5.1	26,948	38.9	5,221	12.6
1988	3,848	3.9	3,817	5.4	5,148	7.0	7,922	7.7	20,735	6.0	1,822	4.6	29,557	42.7	5,871	13.7
1989	3,863	3.9	3,735	5.3	4,706	6.4	7,710	7.5	20,014	5.8	1,617	4.1	31,174	45.0	5,741	13.4

SOURCE: Engineering and Technology Enrollments, Fall 1989, Engineering Manpower Commission

TABLE 7-29

NUMBER AND PERCENT OF WOMEN AND MINORITIES ENROLLED FULL-TIME BY CURRICULUM AND LEVEL, FALL 1989

Engineering Curriculum	Total All Students		Women		Black		Hispanic		Asian–American		American Indian		Foreign	
	UG	Grad	UG	Grad	UG	Grad	UG	Grad	UG	Grad	UG	Grad	UG	Grad
Aerospace	17439	2662	2181	179	612	25	917	42	1497	175	62	2	634	860
Agricultural	1428	735	161	60	22	5	28	6	37	15	3	0	83	392
Architectural	2625	47	548	9	351	2	112	0	94	0	17	0	149	27
Biomedical	3428	1349	1142	352	125	16	132	22	535	74	9	1	259	439
Ceramic	1213	367	219	60	25	1	17	5	64	17	0	0	23	154
Chemical	18324	5124	5714	826	1109	66	1208	90	1204	278	53	9	806	2415
Civil	32856	7495	5445	965	1284	83	2432	122	1923	295	152	16	1729	3891
Computer	19923	6522	3894	1155	1523	141	1207	85	2726	570	90	4	1667	2892
Electrical	88333	18706	10931	1994	6493	340	4699	332	11925	1658	283	33	7776	8410
Engineering Science	4101	2170	771	299	110	28	128	23	323	114	12	1	187	764
Environmental	766	1184	218	328	5	16	18	17	21	60	2	3	15	406
General	9903	508	1699	80	577	9	603	9	961	41	29	1	475	151
Industrial	14314	3970	4095	753	949	68	1149	112	918	208	46	5	1134	2027
Marine	2046	435	191	45	36	2	62	1	62	9	4	0	79	221
Materials	3297	3243	718	539	90	30	150	32	310	173	10	5	123	1557
Mechanical	62787	10642	7217	864	2977	109	3051	157	4280	575	235	15	2898	5085
Mining	985	896	196	146	14	9	18	6	20	6	10	2	54	325
Nuclear	1425	1084	166	110	41	5	59	29	72	57	0	1	47	442
Petroleum	1219	431	151	17	23	7	56	5	31	6	7	0	280	251
Systems	1171	997	268	214	54	25	41	20	148	56	6	1	77	388
All Other	50946	400	8613	111	2519	5	1482	7	3652	19	175	0	1519	77
TOTAL	338,529	68,967	54,538	612	18,939	992	17,567	1,122	30,803	4,404	1,205	99	20,014	31,174
						PERCENT								
Aerospace	100	100	12.5	6.7	3.5	0.9	5.3	1.6	8.6	6.6	0.4	0.1	3.6	32.3
Agricultural	100	100	11.3	8.2	1.5	0.7	2.0	0.8	2.6	2.0	0.2	0.0	5.8	53.3
Architectural	100	100	20.9	19.1	13.4	4.3	4.3	0.0	3.6	0.0	0.6	0.0	5.7	57.4
Biomedical	100	100	33.3	26.1	3.6	1.2	3.9	1.6	15.6	5.5	0.3	0.1	7.6	32.5
Ceramic	100	100	18.1	16.3	2.1	0.3	1.4	1.4	5.3	4.6	0.0	0.0	1.9	42.0
Chemical	100	100	31.2	16.1	6.1	1.3	6.6	1.8	6.6	5.4	0.3	0.2	4.4	47.1
Civil	100	100	16.6	12.9	3.9	1.1	7.4	1.6	5.9	3.9	0.5	0.2	5.3	51.9
Computer	100	100	19.5	17.7	7.6	2.2	6.1	1.3	13.7	8.7	0.5	0.1	8.4	44.3
Electrical	100	100	12.4	10.7	7.4	1.8	5.3	1.8	13.5	8.9	0.3	0.2	8.8	45.0
Engineering Science	100	100	18.8	13.8	2.7	1.3	3.1	1.1	7.9	5.3	0.3	0.0	4.6	35.2
Environmental	100	100	28.5	27.7	0.7	1.4	2.3	1.4	2.7	5.1	0.3	0.3	2.0	34.3
General	100	100	17.2	15.7	5.8	1.8	6.1	1.8	9.7	8.1	0.3	0.2	4.8	29.7
Industrial	100	100	28.6	19.0	6.6	1.7	8.0	2.8	6.4	5.2	0.3	0.1	7.9	51.1
Marine	100	100	9.3	10.3	1.8	0.5	3.0	0.2	3.0	2.1	0.2	0.0	3.9	50.8
Materials	100	100	21.8	16.6	2.7	0.9	4.5	1.0	9.4	5.3	0.3	0.2	3.7	48.0
Mechanical	100	100	11.5	8.1	4.7	1.0	4.9	1.5	6.8	5.4	0.4	0.1	4.6	47.8
Mining	100	100	19.9	16.3	1.4	1.0	1.8	0.7	2.0	0.7	1.0	0.2	5.5	36.3
Nuclear	100	100	11.6	10.1	2.9	0.5	4.1	2.7	5.1	5.3	0.0	0.1	3.3	40.8
Petroleum	100	100	12.4	3.9	1.9	1.6	4.6	1.2	2.5	1.4	0.6	0.0	23.0	58.2
Systems	100	100	22.9	21.5	4.6	2.5	3.5	2.0	12.6	5.6	0.5	0.1	6.6	38.9
All Other	100	100	16.9	27.8	4.9	1.3	2.9	1.8	7.2	4.8	0.3	0.0	3.0	19.3
TOTAL	100	100	16.1	0.9	5.6	1.4	5.2	1.6	9.1	6.4	0.4	0.1	5.9	45.2

FIELD: Nuclear Engineering

SOURCES: Nuclear Engineering Enrollments and Degrees, 1987, U.S. Department of Energy. (DOE/ER–0370) and Manpower Assessment Brief No. 9, March 1989 and No. 11 April 1990.

TABLE 7-30

ENROLLMENTS AND DEGREES IN NUCLEAR ENGINEERING BY SEX, MINORITY GROUP, CITIZENSHIP & EDUCATION LEVEL, 1981-89

Sex, Minority Group & Year	TOTAL ENROLLMENTS (Fall Term)						DEGREES YEAR ENDING JUNE 30						Citizenship Minority Group & Year	TOTAL ENROLLMENTS (Fall Term)						DEGREES YEAR ENDING JUNE 30					
	Under-graduate		Graduate Master's		Ph.D.		Bachelor'		Master's		Ph.D.			Under-graduate		Graduate Master's		Ph.D.		Bachelor's		Master's		Ph.D.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL													HISPANICS												
1981	1532	100	876	100	577	100	692	100	315	100	132	100	1981	28	1.8	10	1.1	10	1.7	8	1.2	8	2.5		
1982	1690	100	946	100	606	100	681	100	342	100	127	100	1982	31	1.8	8	0.8	6	1.0	8	1.2	3	0.9	1	0.8
1983	1701	100	951	100	564	100	654	100	325	100	124	100	1983	25	1.5	14	1.5	6	1.1	9	1.4	4	1.2	1	0.8
1984	1643	100	924	100	559	100	660	100	316	100	132	100	1984	10	0.6	16	1.7	3	0.5	11	1.7	5	1.6	1	0.8
1985	1500	100	835	100	582	100	612	100	306	100	113	100	1985	21	1.4	9	1.1	8	1.4	7	1.1	1	0.3		
1986	1344	100	806	100	549	100	572	100	283	100	120	100	1986	25	1.9	11	1.4	4	0.7	10	1.7	6	2.1	2	1.7
1987	1307	100	793	100	613	100	509	100	295	100	97	100	1987	38	2.9	9	1.1	5	0.8	8	1.6	3	1.0	1	1.0
1988	1389	100	750	100	647	100	484	100	232	100	114	100	1988	31	2.2	10	1.3	6	0.9	5	1.0	1	0.4		
1989	1414	100	757	100	670	100	451	100	287	100	102	100	1989	24	1.7	12	1.6	8	1.2	11	2.4	3	1.0	1	1.0
WOMEN													ASIAN AMERICAN/PACIFIC ISLANDERS												
1981	122	9.0	55	6.3	26	4.5	46	6.6	22	7.0	6	4.5	1981	20	1.3	18	2.1	14	2.4	8	1.2	5	1.6	3	2.3
1982	130	8.2	74	7.8	30	5.0	42	6.2	27	7.9	7	5.5	1982	26	1.5	22	2.3	14	2.3	12	1.8	9	2.6	6	4.7
1983	137	7.6	64	6.7	31	5.5	45	6.9	18	5.5	6	4.8	1983	26	1.5	25	2.6	18	3.2	11	1.7	7	2.2	3	2.4
1984	138	9.1	76	8.2	37	6.6	60	9.1	17	5.4	7	5.3	1984	26	1.6	20	2.2	27	4.8	3	0.5	9	2.8	4	3.0
1985	141	11.5	79	9.5	40	6.9	61	10.0	20	6.5	5	4.4	1985	41	2.7	8	1.0	14	2.4	4	0.7	11	3.6	3	2.7
1986	141	10.3	68	8.4	39	7.1	60	10.5	23	8.1	9	7.5	1986	46	3.4	16	2.0	15	2.7	7	1.2	5	1.8	7	5.8
1987	134	10.3	117	14.8	51	8.3	55	10.8	32	10.8	4	4.1	1987	41	3.1	29	3.7	24	3.9	12	2.4	4	1.4	3	3.1
1988	130	9.4	78	10.4	56	8.7	51	10.5	21	9.1	6	5.3	1988	44	3.2	27	3.6	25	3.9	13	2.7	9	3.9	3	2.6
1989	133	9.4	85	11.2	53	7.9	45	10.0	30	10.5	7	6.9	1989	27	1.9	16	2.1	24	3.6	7	1.6	9	3.1	1	1.0
BLACKS													FOREIGN NATIONALS												
1981	13	1.1	9	1.0	6	1.0	4	0.6	4	1.3	1	0.8	1981	122	5.9	205	23.4	262	45.4	42	6.1	81	25.7	63	47.7
1982	12	1.2	12	1.3	6	1.0	7	1.0	5	1.5			1982	126	5.8	279	29.5	275	45.4	56	8.2	84	24.6	55	43.3
1983	18	1.0	7	0.7	7	1.2	3	0.5	1	0.3			1983	114	6.9	309	32.5	287	50.9	52	8.0	100	30.8	64	51.6
1984	13	0.7	6	0.6	9	1.6	4	0.6	1	0.3			1984	120	6.2	256	27.7	257	46.0	43	6.5	123	38.9	59	44.7
1985	22	2.0	13	1.6	5	0.9	3	0.5	1	0.3	3	2.7	1985	70	5.4	247	29.6	291	50.0	37	6.0	85	27.8	65	57.5
1986	21	1.6	8	1.0	2	0.4	5	0.9	2	0.7	3	2.5	1986	67	5.6	222	27.5	233	42.4	26	4.5	86	30.4	63	52.5
1987	21	1.6	5	0.6	4	0.7	8	1.6	3	1.0			1987	50	3.1	216	27.2	283	46.2	20	3.9	93	31.5	54	55.7
1988	38	2.7	8	1.1	2	0.3	5	1.0	1	0.4	2	1.8	1988	27	1.9	207	27.6	332	51.3	21	4.3	87	37.5	56	49.1
1989	35	2.5	6	0.8	4	0.6	5	1.1	2	0.7			1989	31	2.2	218	28.8	336	50.1	6	1.3	69	24.0	46	45.1

FIELD: Health Physics

SOURCE: Health Physics/Radiation Protection Enrollments and Degrees, 1987, U.S. Department of Energy, (DOE/ERE-0371) amd Manpower Assessment Brief No. 8, March 1989, No. 9, June 1989, & N

TABLE 7-31

ENROLLMENTS AND DEGREES IN HEALTH PHYSICS/RADIATION PROTECTION BY SEX, MINORITY GROUP, CITIZENSHIP AND EDUCATION LEVEL, 1983 – 1989

Sex, Minority Group & Year	TOTAL ENROLLMENTS (Fall Term)						DEGREES YEAR ENDING JUNE 30					
	Under-graduate		Graduate									
			Master's		Ph.D.		Bachelor'		Master's		Ph.D.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL												
1983	308	100	375	100	165	100	106	100	162	100	37	100
1984	328	100	622	100	163	100	113	100	180	100	43	100
1985	315	100	521	100	186	100	92	100	179	100	31	100
1986	238	100	494	100	220	100	125	100	171	100	25	100
1987	225	100	497	100	218	100	85	100	136	100	36	100
1988	173	100	462	100	203	100	71	100	146	100	28	100
1989	200	100	474	100	225	100	65	100	195	100	36	100
WOMEN												
1983	102	33.1	121	32.3	34	20.6	25	23.6	51	31.5	4	10.8
1984	104	31.7	171	27.5	26	16.0	37	32.7	43	23.9	8	18.6
1985	112	35.6	159	30.5	32	17.2	33	35.9	31	17.3	8	25.8
1986	97	40.8	172	34.8	44	20.0	45	36.0	54	31.6	3	12.0
1987	81	36.0	139	28.0	51	23.4	30	35.3	44	32.4	5	13.9
1988	71	41.0	110	23.8	50	24.6	22	31.0	47	32.2	4	14.3
1989	73	36.5	124	26.2	46	20.4	27	41.5	63	32.3	4	11.1
BLACKS												
1983	21	6.8	6	1.6	1	0.6	2	1.9	4	2.5		
1984	19	5.8	14	2.3	1	0.6	4	3.5	1	0.6		
1985	27	8.6	7	1.3			2	2.2	1	0.6		
1986	13	5.5	7	1.4	1	0.5	6	4.8	1	0.6		
1987	12	5.3	8	1.6	1	0.5	4	4.7	3	2.2		
1988	11	6.4	7	1.5	1	0.5	6	8.5				
1989	10	5.0	9	1.9	2	0.9	4	6.2	4	2.1		

Citizenship Minority Group & Year	TOTAL ENROLLMENTS (Fall Term)						DEGREES YEAR ENDING JUNE 30					
	Under-graduate		Graduate									
			Master's		Ph.D.		Bachelor's		Master's		Ph.D.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
HISPANICS												
1983	15	4.9	8	2.1	2	1.2	1	0.9	1	0.6	1	2.7
1984	14	4.3	11	1.8	2	1.2	3	2.7	5	2.8		
1985	13	4.1	12	2.3	3	1.6	4	4.3	6	3.4	1	3.2
1986	6	2.5	10	2.0	5	2.3	2	1.6	3	1.8		
1987	5	2.2	5	1.0	5	2.3			1	0.7		
1988	4	2.3	5	1.1	6	3.0	2	2.8	4	2.7	1	
1989	2	1.0	7	1.5	3	1.3	2	3.1	1	0.5		
ASIAN AMERICAN/PACIFIC ISLANDERS												
1983	2	0.6	8	2.1	9	5.5	1	0.9	7	4.3	1	2.7
1984	3	0.9	10	1.6	13	8.0	1	0.9	2	1.1	4	9.3
1985	1	0.3	11	2.1	11	5.9	1	1.1	3	1.7	1	3.2
1986	3	1.3	6	1.2	16	7.3	2	1.6	2	1.2	1	4.0
1987	4	1.8	13	2.6	15	6.9	1	1.2	6	4.4	2	5.6
1988	3	1.7	11	2.4	9	4.4	2	2.8	3	2.1	2	7.1
1989	5	2.5	16	3.4	16	7.1			6	3.1	2	5.6
FOREIGN NATIONALS												
1983	3	1.0	60	16.0	36	21.8	3	2.8	20	12.3	6	16.2
1984	3	0.9	48	7.7	36	22.1	3	2.7	22	12.2	9	20.9
1985	2	0.6	40	7.7	54	29.0	2	2.2	32	17.9	10	32.3
1986	5	2.1	68	13.8	67	30.5	2	1.6	25	14.6	6	24.0
1987	4	1.8	53	10.7	66	30.3	2	2.4	18	13.2	9	25.0
1988	1	0.6	51	11.0	75	36.9	2	2.8	17	11.6	5	17.9
1989	3	1.5	50	10.5	67	29.8			18	9.2	11	30.6

FIELD: Engineering Technology

SOURCE: Earned Degrees Conferred Series, 1971-89, National Center for Education Statistics, redefined by the National Science Foundation.

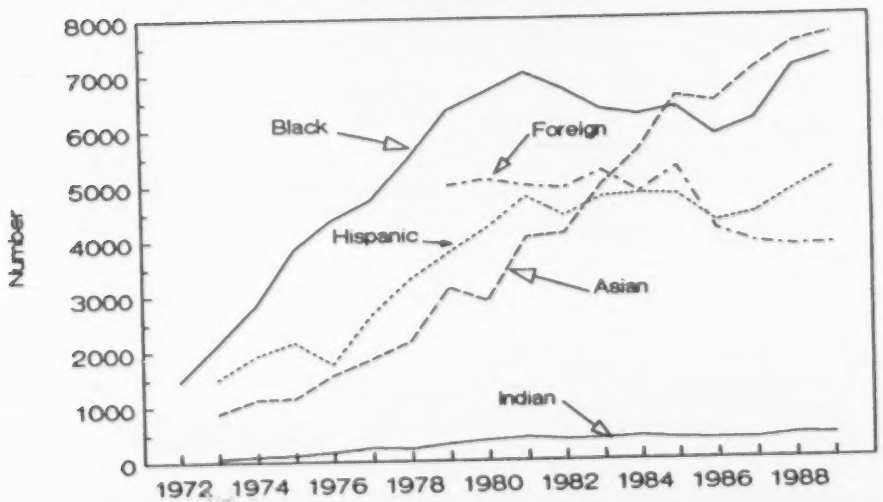
TABLE 7-32

DEGREES IN ENGINEERING TECHNOLOGY BY SEX AND LEVEL OF DEGREE, 1971 - 1989

	BACHELOR'S			MASTER'S		
YEAR	Both Sexes	Women Only	% Women	Both Sexes	Women Only	% Women
1971	5,148	42	0.8	134	0	0.0
1972	5,772	46	0.8	237	1	0.4
1973	4,854	52	1.1	122	2	1.6
1974	7,456	105	1.4	209	9	4.3
1975	7,497	192	2.6	221	4	1.8
1976	7,943	165	2.1	328	14	4.3
1977	8,348	196	2.3	284	23	8.1
1978	8,787	246	2.8	360	25	6.9
1979	9,355	327	3.5	268	18	6.7
1980	10,491	490	4.7	339	20	5.9
1981	11,713	675	5.8	323	39	12.1
1982	12,984	875	6.7	413	55	13.3
1983	17,015	1,353	8.0	520	51	9.8
1984	18,602	1,464	7.9	551	60	10.9
1985	18,767	1,447	7.7	607	62	10.2
1986	19,443	1,527	7.9	602	97	16.1
1987	19,250	1,478	7.7	612	83	13.6
1988	19,042	1,523	8.0	733	117	16.0
1989	18,977	1,560	8.2	828	106	12.8
TOTALS	231,444	13,763	5.9	7,691	786	10.2

CHART 7-3

MINORITY ENGINEERING FRESHMEN 1972 - 1989



Source: EMC

Graph by CPST

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1948 through 1990, Engineering Manpower Commission

TABLE 7-33

BACHELORS DEGREES AWARDED IN ENGINEERING TECHNOLOGY BY CURRICULUM, SEX AND MINORITY GROUP

Selected Years 1984 - 1990

Curriculum	Total						African Americans						Hispanics						Native Americans					
	1984	1986	1987	1988	1989	1090	'84	'86	'87	'88	'89	'90	'84	'86	'87	'88	'89	'90	'84	'86	'87	'88	'89	'90
Aerospace & related	189	273	170	160	170	156	2	3	4	1	2	2	2	17	10	6	7	6		1	1	1	1	1
Architectual	149	164	175	156	153	218	20	14	17	17	16	13	2	3	1	1	1	1	1					
Automotive	12	20	8	10	38	6								1		1								
Chemical	18	20	20	31	22	48	1		1		1													
Civil	780	648	614	597	588	446	24	41	29	43	33	17	25	17	15	22	24	11	3	1	6	1	3	3
Computer	259	222	314	401	414	380	31	6	23	24	30	23	6	2	3	4	5	12	1		1	1	2	2
Construction	548	545	464	433	448	606	24	22	17	14	21	20	13	6	6	10	8	12			1	6	2	
Drafting/Design	180	186	232	199	172	190	2	1	1	2	4	1	2	2	2	6	3	3		1				
Electrical	1678	2079	2090	2061	1885	1829	70	100	131	123	91	110	48	11	30	27	21	29	2	1	8	5	3	3
Electromechanical	187	147	142	155	161	174	40	20	14	27	39	39	8	8	5	6	9	11					1	
Electronic	2207	3218	3462	3148	3149	2768	187	112	104	93	109	250	85	35	47	51	52	144	4	5	6	4	4	4
Engineering Scienc			5	9	7					1														
General Engineerin	624	985	846	702	669	861	13	20	23	11	10	34	29	52	63	32	41	32	1	6	4	1	1	
Industrial/Manuf	966	1427	1393	1352	1327	874	71	36	45	76	72	57	23	17	21	26	21	15		1	2	2	1	
Marine	48	56	63	107	74	75		3	1	6	23	3		1	1	4	2	2					1	
Materials		2	2	5	7	1																		
Mechanical	1980	2120	2016	1930	1796	1701	75	83	93	70	64	76	60	33	26	32	22	27	1	4	1	6	3	3
Mining/Metall/Weld	188	69	51	31	32	18	2		2	1	1		8	5										
Nuclear				2	9	8																		
Others	169	322	236	240	168	196	20	5	6	8	4	13	3	2	4	4	3	3	1					
ALL STUDENTS*	10182	12503	12303	11729	11289	10555	582	466	511	517	499	658	314	212	234	232	219	308	14	20	30	27	29	16

Curriculum	Women						Under-rep. Minorities						Asian Americans						Foreign Nationals					
	'84	'86	'87	'88	'89	'90	'84	'86	'87	'88	'89	'90	'84	'86	'87	'88	'89	'90	'84	'86	'87	'88	'89	'90
Aerospace & related	4	19	14	10	11	22	4	20	15	8	10	9	1	16	3	5	6	11	37	27	8	27	29	24
Architectual	16	30	21	27	29	39	23	17	18	18	17	14	3	1			2	11	9	8	19	8	7	12
Automotive		1		1				1		1			1		2		3		7	4	1	4		
Chemical	2	2	1	4	3	4	1		1		1							4		2		2	1	3
Civil	50	51	44	53	48	39	52	63	45	71	58	31	28	11	20	7	14	6	75	52	67	52	56	36
Computer	73	51	60	50	99	84	38	9	26	29	36	37	2	10	10	22	20	26	9	18	11	18	18	42
Construction	40	26	23	20	17	50	37	29	23	25	35	34	32	9	7	4	5	10	15	15	15	15	18	9
Drafting/Design	17	16	17	22	24	19	4	3	4	8	7	4	3	2	9	3	2	1		6	4	6	1	3
Electrical	102	94	112	93	95	76	120	113	162	158	117	142	75	42	77	77	57	72	82	63	71	63	47	83
Electromechanical	9	6	7		4	8	48	28	19	33	48	51	9	4	1	3	11	20	2	5	4	5	31	6
Electronic	107	76	82	92	98	179	276	148	156	150	165	398	129	96	99	103	106	228	141	109	109	109	94	156
Engineering Scienc				2	1					1														
General Engineerin	32	85	68	41	68	78	43	81	92	47	52	67	33	66	49	38	64	38	19	27	11	27	6	12
Industrial/Manuf	167	159	146	150	132	109	94	54	67	104	95	73	14	13	20	17	18	19	48	32	30	32	36	20
Marine		2	5	6		5		4	2	10	25	6	3	7	3	1	1	4	6	2	7	2	1	2
Materials				1																				
Mechanical	74	106	81	96	72	93	136	119	123	103	92	106	37	30	64	39	38	33	100	77	102	77	63	69
Mining/Metall/Weld	14	4		5	1		10	5	2	1	1								5	3	4	3		
Nuclear																2								
Others	37	31	54	55	33	44	24	7	10	12	7	16	2		2	4			15	7	9	7	15	9
ALL STUDENTS*	744	759	735	730	735	849	910	701	765	779	745	995	372	307	366	325	347	491	570	457	472	457	423	486

* Note: groups are neither all-inclusive nor mutually exclusive, and will not sum to totals.

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1984 through 1990, Engineering Manpower Commission

TABLE 7-34

ENGINEERING TECHNOLOGY ASSOCIATE DEGREES BY CURRICULUM, SEX AND MINORITY GROUP 1984 – 1990

Curriculum	Total				Women				African Americans				Hispanics				Native America				Asian Americans				Foreign Nationals			
	1984	1986	1988	1990	'84	'86	'88	'90	'84	'86	'88	'90	'84	'86	'88	'90	'84	'86	'88	'90	'84	'86	'88	'90	'84	'86	'88	'90
Aerospace & related	384	375	292	250	12	11	6	3	32	32	35	38	38	50	47	31					24	22	21	25	14	21	21	21
Air Cond/Heat/Refrig	290	228	216	227	5	3	1	1	6	6	5	6	0	6	2	5	2	6	7	2	1	1		2	1			
Architectural	935	691	779	821	179	124	134	174	45	39	21	30	24	16	6	22	1		4	2	4	3	12	15	20	7	7	13
Automotive	314	190	251	260	7	5	7	3	25	17	9	22	6	6	3	8		2	3	2	1	3	4	6	3	3	3	3
Chemical	290	248	231	231	118	104	96	97	33	22	11	22	10	8	2	4	2	1		1	4	5	6	7		2	2	2
Civil	1078	1108	882	982	84	138	95	87	45	46	25	46	41	39	10	17	2	6	4	2	14	7	6	8	40	14	14	16
Computer	1309	1228	960	765	380	331	214	172	64	89	97	51	23	22	25	21	6	7	4	7	19	30	41	37	40	19	19	35
Construction	304	273	338	355	16	22	13	30	15	15	4	14	8	11	6	7	2	2	2	1	1	3	1	2	2	1	1	4
Drafting/Design	675	1290	792	754	122	324	144	161	33	56	32	36	13	46	15	10	2	3	5	3	10	17	5	13	10	8	8	10
Electrical	2864	3062	2552	2194	130	171	139	137	127	129	94	133	53	52	44	48	6	10	10	7	30	58	61	88	28	9	9	24
Electromechanical	389	400	462	311	25	25	32	28	33	25	15	28	11	14	6	14	1		1		2	9	6	6	2			7
Electronic	4430	3093	265	2544	274	174	196	223	239	127	136	169	126	52	51	81	19	14	8	6	156	109	136	121	69	53	53	81
Engineering Science	164	310	28	16	22	34	4	2	5	8	3	1		3	1		1				2	8	2		3			
General Engineering	179	205	107	273	13	34	14	27	1	6	4	10	4	2	3	12		1			6	3	6	18				2
Industrial/Manufact	839	906	899	711	117	114	85	72	31	42	28	29	12	6	7	10	1	3	1		10	12	18	22	8	15	15	6
Marine	7	2	6	12		1	2	1							1													1
Materiale		21	51	38			2	3		1	1	1																
Mechanical	2668	2139	2069	1753	198	161	155	108	79	67	69	51	57	35	17	29	7	2	7	1	32	23	38	38	43	26	26	16
Mining/Metall/Weld	269	47	54	47	15	3	3	3	3	3	3	2	2		2		2					1	1					
Nuclear	44	40	30	15	5	6	4	4	1	2	1			3		1												
Others	1005	536	289	285	119	84	39	42	60	27	8	22	19	12	7	11	11	4	1		27	16	1	6	12	3	3	5
ALL STUDENTS*	18432	16392	11553	12844	1841	1869	1385	1378	877	759	601	711	447	383	255	331	65	61	57	34	343	330	365	414	295	181	181	246

* Note: groups are neither all–inclusive nor mutually exclusive, and will not sum to totals.

FIELD: Engineering Technology

SOURCE: Engineering and Technology Enrollments Fall 1987 through 1989, Engineering Manpower Commission

TABLE 7-35

ENGINEERING TECHNOLOGY ENROLLMENTS OF ALL STUDENTS, WOMEN AND MINORITIES, FALL 1979 – 1989

YEAR (Fall)	ASSO DEG & PRE-ENG Full Time 1st Year	2nd Year	Total*	Part Time	BACHELOR OF TECHNOLOGY Full Time 1st Year	%	2nd Year	3rd Year	4th Year	Total	%	Part Time	All Post Bacc.
ALL STUDENTS													
1979	47,517	24,988	73,321	41,284	8,680	100	6,547	9,902	9,842	34,971	100	9,982	294
1980	67,971	35,434	104,593	54,549	10,998	100	8,543	12,271	12,132	43,944	100	12,767	556
1981	55,202	32,461	88,535	45,299	10,691	100	8,313	13,339	13,020	45,363	100	11,409	546
1982	51,513	29,438	81,748	45,095	7,826	100	7,369	11,419	11,604	38,218	100	10,696	376
1983	36,866	23,618	61,409	37,299	16,166	100	10,181	11,818	12,875	51,040	100	13,252	296
1984	29,211	20,053	50,429	31,811	17,595	100	11,663	15,561	15,911	60,730	100	14,640	287
1985	25,618	16,579	42,663	29,321	8,771	100	6,714	10,554	13,829	39,868	100	11,212	271
1986	29,701	18,699	49,059	33,629	9,476	100	6,913	10,839	14,251	41,479	100	13,225	413
1987	24,633	16,450	42,487	33,144	8,052	100	6,456	9,890	13,715	38,113	100	14,757	985
1988	24,825	15,530	42,115	36,954	8,652	100	6,322	9,436	13,099	37,509	100	15,126	574
1989	23,620	15,264	40,604	36,048	8,605	100	6,363	8,465	12,052	35,485	100	15,460	293
WOMEN													
1979	5,621	2,428	8,229	4,923	800	9.2	533	595	447	2,375	6.3	508	82
1980	8,754	3,795	12,920	7,594	1,085	12.5	837	947	834	3,703	9.9	776	60
1981	7,838	3,970	11,876	8,059	1,360	15.7	978	1,158	1,067	4,563	12.2	766	62
1982	6,472	3,503	10,020	5,389	762	8.8	624	848	736	2,970	7.9	599	29
1983	4,296	2,701	7,035	4,307	1,284	14.8	796	890	960	3,930	10.5	964	42
1984	3,640	2,295	6,025	3,375	1,284	14.8	796	890	960	3,930	10.5	1,477	71
1985	3,331	1,877	5,228	3,744	774	8.9	605	814	1,097	3,290	8.8	958	44
1986	3,585	2,039	5,664	3,141	865	10.0	714	921	1,214	3,714	9.9	1,045	67
1987	2,848	1,723	4,698	3,932	659	7.6	526	727	1,325	3,237	8.6	1,105	66
1988	3,007	1,692	4,839	5,139	737	8.5	538	744	1,032	3,051	8.1	1,490	50
1989	2,772	1,725	4,654	4,835	885	10.2	615	764	1,054	3,318	8.8	1,425	43
BLACKS													
1979	4,101	1,601	5,750	2,726	660	7.6	473	537	447	2,117	6.1	323	8
1980	5,888	2,191	8,139	3,762	1,071	9.7	752	896	716	3,435	7.8	552	20
1981	4,519	1,834	6,420	3,860	1,209	11.3	886	978	905	3,978	8.8	538	39
1982	4,567	1,795	6,384	2,922	818	10.5	707	670	542	2,737	7.2	483	7
1983	3,512	1,479	5,015	2,716	2,544	15.7	1,237	933	760	5,474	10.7	889	15
1984	2,611	1,273	3,894	2,245	2,588	14.7	1,400	1,310	1,038	6,336	10.4	1,037	13
1985	2,582	1,121	3,708	2,671	1,117	12.7	642	725	768	3,252	8.2	474	54
1986	3,173	1,311	4,489	2,194	1,299	13.7	811	764	856	3,730	9.0	633	15
1987	1,893	900	2,905	2,205	1,074	13.3	711	760	886	3,431	9.0	744	33
1988	1,923	901	2,998	2,732	1,288	14.9	764	760	872	3,684	9.8	869	17
1989	2,978	1,327	4,484	3,287	1,355	15.7	722	836	884	3,797	10.1	817	6

YEAR (Fall)	ASSO DEG & PRE-ENG Full Time 1st Yr	2nd Yr	Total	Part Time	BACHELOR OF TECHNOLOGY Full Time 1st Yr	%	2nd Yr	3rd Yr	4th Yr	Total	%	Part Time
HISPANICS												
1979	1,214	502	1,745	857	184	2.1	137	243	228	792	2.3	267
1980	2,586	1,236	3,873	1,291	151	1.4	146	280	228	805	1.8	332
1981	1,668	797	2,473	1,064	213	2.0	146	270	268	897	2.0	465
1982	2,015	815	2,864	1,073	216	2.8	170	263	236	885	2.3	400
1983	1,475	569	2,072	803	730	4.5	425	405	365	1,925	3.8	515
1984	1,026	563	1,619	792	918	5.2	451	543	489	2,401	4.0	523
1985	888	484	1,398	887	339	3.9	196	393	515	1,443	3.6	355
1986	1,405	613	2,030	594	358	3.8	228	299	357	1,242	3.0	198
1987	708	398	1,152	845	321	4.0	261	370	468	1,420	3.7	403
1988	722	415	1,231	1,045	349	4.0	234	305	414	1,302	3.5	412
1989	1,307	651	2,076	1,125	330	3.8	217	299	381	1,227	3.3	283
ASIAN AMERICANS												
1979	718	349	1,085	298	151	1.7	104	214	175	644	1.8	111
1980	981	543	1,559	541	127	1.2	94	228	232	681	1.5	110
1981	1,015	557	1,606	660	192	1.8	130	182	285	789	1.7	216
1982	1,048	544	1,623	500	197	2.5	224	286	265	972	2.5	236
1983	807	421	1,266	560	420	2.6	323	317	423	1,483	2.9	401
1984	641	447	1,109	467	432	2.5	336	478	474	1,720	2.8	436
1985	667	444	1,120	679	348	4.0	263	302	442	1,355	3.4	301
1986	908	562	1,480	458	432	4.6	297	416	442	1,587	3.8	361
1987	656	462	1,161	685	399	5.0	326	476	759	1,960	5.1	444
1988	683	436	1,167	822	425	4.9	311	482	683	1,901	5.1	599
1989	857	524	1,446	900	345	4.0	279	439	496	1,559	4.2	440
AMERICAN INDIAN												
1979	335	133	473	124	32	0.4	24	39	36	131	0.4	18
1980	412	151	568	160	48	0.4	27	33	42	150	0.3	13
1981	420	174	597	152	42	0.4	16	23	31	112	0.2	39
1982	245	119	367	102	32	0.4	21	32	37	122	0.3	30
1983	311	121	435	92	105	0.6	71	64	84	324	0.6	28
1984	258	130	393	68	65	0.4	50	51	55	221	0.4	31
1985	259	110	370	84	45	0.5	35	33	55	168	0.4	13
1986	213	92	308	82	39	0.4	32	38	58	167	0.4	17
1987	137	85	226	105	35	0.4	13	35	64	147	0.4	26
1988	156	65	226	91	44	0.5	24	49	84	201	0.5	57
1989	169	91	272	139	49	0.6	32	40	94	215	0.6	42

* Totals include other years

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 7-36

FEDERAL WORKERS EMPLOYED IN ENGINEERING AND ARCHITECTURE BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1990

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIA		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
General Engineering	21070	1465	7.0	2702	12.8	316	11.7	741	3.5	687	3.3	1170	5.6	104	0.5	18368	87.2
Safety Engineering	581	49	8.4	106	18.2	17	16.0	27	4.6	43	7.4	32	5.5	4	0.7	475	81.8
Fire Preven. Engineering	148	10	6.8	20	13.5	2	10.0	3	2.0	1	0.7	15	10.1	1	0.7	128	86.5
Materials Engineering	1318	208	15.8	160	12.1	39	24.4	37	2.8	26	2.0	93	7.1	4	0.3	1158	87.9
Landscape Architecture	664	158	23.8	28	4.2	5	17.9	5	0.8	9	1.4	12	1.8	2	0.3	636	95.8
Architecture	1943	349	18.0	479	24.7	61	12.7	181	9.3	97	5.0	184	9.5	17	0.9	1464	75.3
Civil Engineering	15364	1265	8.2	2187	14.2	257	11.8	399	2.6	595	3.9	1062	6.9	131	0.9	13177	85.8
Environmental Engineerin	3404	728	21.4	619	18.2	174	28.1	161	4.7	161	4.7	282	8.3	15	0.4	2,785	81.8
Mechanical Engineering	13175	855	6.5	2133	16.2	855	40.1	436	3.3	386	2.9	1260	9.6	51	0.4	11,042	83.8
Nuclear Engineering	3623	218	6.0	525	14.5	218	41.5	61	1.7	38	1.0	415	11.5	11	0.3	3,098	85.5
Electrical Engineering	4936	406	8.2	1143	23.2	406	35.5	248	5.0	192	3.9	684	13.9	19	0.4	3,793	76.8
Computer Engineering	1584	304	19.2	259	16.4	304	0.0	91	5.7	63	4.0	101	6.4	4	0.3	1,325	83.6
Electronics Engineering	29796	5476	18.4	5446		5476	100.6	1211	4.1	1169	3.9	2971	10.0	95	0.3	24,350	81.7
Biomedical Engineering	386	74	19.2	40	10.4	74	185.0	12	3.1	6	1.6	18	4.7	4	1.0	346	89.6
Aerospace Engineering	9633	797	8.3	1027	10.7	797	77.6	266	2.8	287	3.0	451	4.7	23	0.2	8606	89.3
Naval Architecture	1222	85	7.0	192	15.7	85	44.3	36	2.9	21	1.7	134	11.0	1	0.1	1030	84.3
Mining Engineering	392	15	3.8	28	7.1	15	53.6	0	0.0	6	1.5	21	5.4	1	0.3	364	92.9
Petroleum Engineering	431	33	7.7	42	9.7	33	78.6	7	1.6	14	3.2	15	3.5	6	1.4	389	90.3
Agricultural Engineering	393	18	4.6	23	5.9	18	78.3	3	0.8	7	1.8	8	2.0	5	1.3	370	94.1
Ceramic Engineering	66	11	16.7	2	3.0	11	550.0	0	0.0	0	0.0	2	3.0	0	0.0	64	97.0
Chemical Engineering	1570	290	18.5	269	17.1	290	107.8	46	2.9	64	4.1	155	9.9	4	0.3	1301	82.9
Welding Engineering	86	5	5.8	14	16.3	5	35.7	2	2.3	0	0.0	11	12.8	1	1.2	72	83.7
Industrial Engineering	3070	443	14.4	468	15.2	111	23.7	137	4.5	131	4.3	183	6.0	17	0.6	2602	84.8
TOTALS	114855	13262	11.5	17912	15.6	9569	53.4	4110	3.6	4003	3.5	9279	8.1	520	0.5	96943	84.4

FIELD: Agricultural Sciences

SOURCE: Science and Engineering Doctorates: 1960–85; National Science Foundation, 1987; and Doctorate Recipients from United States Universities, Summary Reports, 1972–1988, National Reserch Council

TABLE 8-1

PhD AWARDS IN THE AGRICULTURAL SCIENCES BY SUBFIELD AND SEX, 1960 – 1989

	Year of Doctorate														
	1960–69			1970–79			1980–87			1988			1989		
Fields	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
TOTAL	5560	60	1.1	9956	388	3.9	9956	494	5.0	1170	217	18.5	1254	254	20.3
Agricultural Economics(7)	90	0	0.0	1537	46	3.0	2437	344	14.0	155	31	20.0	164	25	15.2
Animal Breeding & Genetics(1)	1224	20	1.6	448	8	1.8	223	37	17.0	27	2	7.4	23	3	13.0
Animal Nutrition(2)							430	65	14.9	54	12	22.2	66	15	22.7
Dairy Science(8)							0	0		12	1	8.3	16	1	6.3
Poultry Science(8)							0	0		10	2	20.0	11	2	18.2
Fisheries Science(3)							217	30	16.2	42	8	19.0	34	5	14.7
Animal Sci/Nutrition(2)	1	1	100	880	52	5.9	401	47							
Animal Sciences, Other(2)							540	82	14.3	86	13	15.1	95	26	27.4
Agronomy	1566	6	0.4	1494	40	2.7	1391	134	9.4	141	19	13.5	140	20	14.3
Plant Breeding & Genetics(5)							473	73	15.4	83	12	14.5	64	13	20.3
Plant Pathology(5)							488	111	21.6	46	12	26.1	63	24	38.1
Plant Protection–Pest Mgmt(8)							0	0		1			7		
Phytopathology(5)	871	29	3.3	943	72	7.6	331	62						1	
Plant Sciences, Other(5)							120	17	14.0	23	3	13.0	15	4	26.7
Food Science(9)	39	1	2.6	921	162	17.6	1094	306	28.8	16	3	18.8	1		
Food Engineering(8)							0	0		6	1	16.7	11	1	9.1
Food Sciences Other(8)							0	0		119	36	30.3	147	53	36.1
Soil Sciences(6)	40		0.0	781	20	2.6	807	70	8.6	18	1	5.6			
Soil Chemistry/Microbio(8)							0	0		33	7	21.2	28	7	25.0
Soil Sciences Other(8)							0	0		62	11	17.7	75	7	9.3
Horticulture Sciencs	589	13	2.2	645	32	5.0	668	124	18.1	61	16	26.2	75	19	25.3
Forestry Science(9)	466	1	0.2	792	13	1.6	835	77	9.8	15	2	13.3			
Forest Biology(8)							0	0		21	3	14.3	22	3	13.6
Forest Engineering(8)							0	0		3			1		
Forest Management(8)							0	0		18	2	11.1	21	2	9.5
Wood Science(8)							0	0		7			16		
Renewable Natural Resouces(8)							0	0		7			16	1	6.3
Forestry & Related Sci Oth(8)							0	0		35	6	17.1	57	8	14.0
Fish & Wildlife(3)	226	1	0.4	570	16	2.8	204	23							
Wildlife(8)							23	0		3					
Wildlife/Range Mgmt(3)							158	9	5.1	36	8	22.2	52	10	19.2
Agriculture, General	45	1	2.2	56	4	7.1	40	2	5.7	9	3	33.3	7	2	28.6
Agriculture, Other	403	8	2.0	889	29	3.3	612	63	9.8	21	3	14.3	27	2	7.4

(1) Called "Animal husbandry before 1983. (2) "Animal sciences" subfield introduced in 1972, name changed to "Animal science and animal nutrition" in 1977, split into two separate subfields in 1983, both dropped in 1988. (3) "Fish and wildlife" split iinto two separate subfields in 1983. (4) Introduced as "Food science and technology" in 1969, name changed to "Food sciences in 1983. (5) "Phytopathology" discontinued in 1983 and indicated subfields were introduced. (6) Called "Soils and soil science" before 1983, split out in 1988. (7) Added in 1969. (8) Added in 1988. (9) Split out in subfields in 1988.

FIELD: Biological Sciences

SOURCE: Science and Engineering Doctorates: 1960-85; National Science Foundation, 1987; and Doctorate Recipients from United States Universities, Summary Reports, 1972-1989, National Reserch Council

TABLE 8-2

PhD AWARDS IN THE BIOLOGICAL SCIENCES BY SUBFIELD AND SEX, 1960 – 1989

Fields	Year of Doctorate														
	1960–69			1970–79			1980–87			1988			1989		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
TOTAL	19571	2858	14.6	35618	7543	21.2	33147	10425	31.5	4020	1469	36.5	4027	1508	37.4
Anatomy	679	123	18.1	1349	323	23.9	1113	385	33.5	88	32	36.4	79	26	32.9
Biochemistry	3976	714	18.0	8116	1328	21.7	5521	1689	30.1	612	203	33.2	670	266	39.7
Biometrics & Biostatistics	177	24	13.6	406	85	20.9	390	131	33.1	47	15	31.9	46	20	43.5
Biophysics	602	50	8.3	1178	142	12.1	772	127	15.3	97	21	21.6	87	21	24.1
Botany, other (1)							709	223	31.0	112	41	36.6	117	52	44.4
Botany(1)	1384	193	13.9	1745	359	20.6	437	122	27.9						
Cell Biology(2)							698	266	37.0	118	55	46.6	132	57	43.2
Cytology(2)	244	75	30.7	422	150	35.5	132	45	34.1						
Ecology	477	18	3.8	1435	163	11.4	1666	394	23.6	155	47	30.3	162	37	22.8
Embryology	217	69	31.8	252	77	30.6	121	52	45.2	7	3	42.9	10	4	40.0
Endocrinology(3)							128	50	35.8	21	10	47.6	21	10	47.6
Entomology	1223	58	4.7	1726	115	6.7	1410	226	15.6	133	26	19.5	138	22	15.9
Human & Animal Genetics(4)							591	275	46.2	118	57	48.3	112	57	50.9
Plant Genetics(4)							146	42	29.2	26	6	23.1	18	3	16.7
Genetics(4)	1060	160	15.1	1424	390	27.4	490	182	37.1						
Human & Animal Pathology(5)							617	193	30.0	112	43	38.4	103	40	38.8
Plant Pathology(5)							196	44	20.9	30	9	30.0	22	8	36.4
Pathology(5)	324	18	5.6	793	126	15.9	311	81	26.0						
Human & Animal Pharmacology	958	98	10.2	1852	295	15.9	2198	649	28.7	249	91	36.5	238	98	41.2
Human & Animal Physiology(6)							1444	413	28.3	225	89	39.6	271	104	38.4
Animal/plant Physiology(6)	307	32	10.4				0	0							
Animal Physiology(6)	1628	242	14.9	3286	576	17.5	976	224	23.0						
Plant Physiology(6)	554	53	9.6	702	111	15.8	542	136	25.2	74	22	29.7	47	15	31.9
Hydrobiology	95	4	4.2	155	14	9.0	0	0							
Immunology				630	196	31.1	1234	486	39.5	178	90	50.6	152	61	40.1
Microbiology(7)							1853	682	37.4	333	120	36.0	340	123	36.2
Bacteriology(7)							81	24	26.5	7	2	28.6	12	3	25.0
Microbiology/Bacteriology(7)	2601	473	18.2	3703	932	25.2	1044	312	29.9						
Molecular Biology	91	19	20.9	1365	395	28.9	2248	808	35.6	364	129	35.4	407	152	37.3
Neurosciences							981	332	34.4	162	58	35.8	181	63	34.8
Nutritional Sciences(8)	27	7	25.9	364	213	58.5	1018	658	64.1	127	88	69.3	128	90	70.3
Parasitology				133	21	15.8	176	30	15.6	20	8	40.0	20	5	25.0
Toxicology(3)							572	156	26.7	108	30	27.8	110	38	34.5
Zoology,other(9)							938	285	30.2	167	43	25.7	133	35	26.3
Zoology(9)	2242	311	13.9	2906	504	17.3	623	138							
Biological Sci, General	230	46	20.0	1738	475	27.3	1797	578	31.6	258	100	38.8	236	79	33.5
Biological Sci, Other	380	67	17.6	1783	539	30.2	1087	372	34.9	160	63	39.4	114	45	39.5

(1) Called "Botany" before 1983. (2) "Cytology" introduced in 1962, discontinued in 1983. "Cell biology" introduced in 1983. (3) Introduced in 1983. (4) "Genetics" split into "Plant genetics" and "Human and animal genitics in 1983. (5) "Pathology" split into "Plant pathology" and "Human and animal pathology" in 1983. (6) In 1962 "Animal and plant physiology" was split into "Animal physiology" and "Plant physiology." In 1983 "Animal physiology" was replaced by "Human and animal physiology." (7) Originally called "Microbiology." "Bacteriology" added in 1970. In 1983 they were split into separate subfields. (8) "Nutriton" discontinued in 1983. "Nutrition and dietetics" introduced in 1976, then replaced by "Nutrition Sciences" in 1983. (9) "Zoology" discontinued in 1983 and Zoology, other" introduced.

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 8-3

AGRICULTURAL SCIENCES DOCTORATES BY RACE/ETHNICITY, 1975 – 1989
(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	633	596	37	5.8	533	28	88.6	5	0	3	1	0	0	1.4	39	7	7.3
1976	536	496	40	7.5	455	32	90.9	7	1	3	1	1	0	2.4	16	4	3.7
1977	514	479	35	6.8	427	31	89.1	13	2	4	0	1	0	3.9	19	2	4.1
1978	573	534	39	6.8	456	30	84.8	10	1	7	2	2	0	3.8	31	6	6.5
1979	573	517	56	9.8	456	47	87.8	8	1	4	2	0	0	2.6	19	4	4.0
1980	605	526	79	13.1	470	69	89.1	7	0	1	4	1	0	2.1	22	6	4.6
1981	629	537	92	14.6	467	84	87.6	11	0	15	0	1	0	4.3	20	5	4.0
1982	670	544	126	18.8	505	111	91.9	6	1	5	2	2	1	2.5	14	9	3.4
1983	685	580	105	15.3	525	88	89.5	11	1	5	1	1	0	2.8	24	9	4.8
1984	660	560	100	15.2	510	92	91.2	15	3	8	0	1	0	4.1	16	4	3.0
1985	726	600	126	17.4	546	113	90.8	15	1	8	4	4	0	4.4	19	5	3.3
1986	627	504	123	19.6	447	110	88.8	13	3	11	6	0	0	5.3	18	4	3.5
1987	630	505	125	19.8	444	108	87.6	10	3	11	4	2	0	4.8	31	7	6.0
1988	610	482	128	21.0	408	110	84.9	15	5	19	2	4	2	7.7	23	7	4.9
1989	651	486	165	25.3	420	150	87.6	13	1	15	3	1	1	5.2	17	6	3.5
Totals	9,322	7,946	1,376	14.8	7,069	1,203	88.7	159	23	119	32	21	4	3.8	328	85	4.4

* The data for 'All races' include recipients whose race/ethnicity is unknown.

TABLE 8-4

BIOLOGICAL SCIENCES DOCTORATES BY RACE/ETHNICITY, 1975 – 1989
(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	2,973	2,249	724	24.4	2,099	651	92.5	33	16	28	4	0	1	2.8	89	52	4.7
1976	3,016	2,332	684	22.7	2,176	613	92.5	32	21	22	3	2	0	2.7	100	47	4.9
1977	2,948	2,268	680	23.1	2,124	616	92.9	18	18	17	8	5	2	2.3	104	36	4.7
1978	2,943	2,191	752	25.6	2,039	663	91.8	31	24	20	10	5	0	3.1	96	55	5.1
1979	3,071	2,250	821	26.7	2,099	731	92.2	15	20	27	11	3	0	2.5	106	59	5.4
1980	3,229	2,319	910	28.2	2,155	817	92.0	32	19	24	7	3	2	2.7	105	65	5.3
1981	3,268	2,314	954	29.2	2,163	852	92.3	22	28	28	13	5	1	3.0	96	60	4.8
1982	3,324	2,311	1,013	30.5	2,153	909	92.1	24	25	30	17	4	3	3.1	100	59	4.8
1983	3,252	2,144	1,108	34.1	2,007	988	92.1	24	22	22	21	3	1	2.9	88	76	5.0
1984	3,306	2,234	1,072	32.4	2,085	959	92.1	24	26	29	15	7	3	3.1	89	69	4.8
1985	3,185	2,125	1,060	33.3	1,959	950	91.3	32	21	36	23	4	9	3.9	94	57	4.7
1986	3,182	2,085	1,097	34.5	1,909	976	90.7	26	22	39	27	11	6	4.1	100	66	5.2
1987	3,052	1,935	1,117	36.6	1,762	988	90.1	35	25	38	24	7	4	4.4	93	76	5.5
1988	3,319	2,068	1,251	37.7	1,849	1,113	89.2	25	23	49	27	4	2	3.9	98	73	5.2
1989	3,277	2,013	1,264	38.6	1,777	1,110	88.1	29	23	51	21	4	3	4.0	110	88	6.0
Totals	47,345	32,838	14,507	30.6	30,356	12,936	91.4	402	333	460	231	67	37	3.2	1,468	938	5.1

* The data for 'All races' include recipients whose race/ethnicity is unknown.

FIELD: Life Sciences

SOURCE: Earned Degrees Conferred, 1971-1989, National Center for Education Statistics, redefined by NSF

TABLE 8-5

PhD DEGREES IN THE LIFE SCIENCES BY SEX AND SUBFIELD, 1950 – 1989

Year	Total Life Sciences				Life Sciences Fields									
					Agricultural					Biological				
	No.	Men	Wom	%W	No.	%Ag	Men	Wom	%W	No.	%Bio	Men	Wom	%W
1950	1033	938	95	9	368	36	364	4	1.1	665	64	574	91	14
1951	1192	1090	102	9	379	32	376	3	0.8	813	68	714	99	12
1952	1187	1093	94	8	412	35	402	10	2.4	775	65	691	84	11
1953	1443	1320	123	9	473	33	468	5	1.1	970	67	852	118	12
1954	1628	1517	111	7	515	32	508	7	1.4	1113	68	1009	104	9
1955	1505	1398	107	7	507	34	499	8	1.6	998	66	899	99	10
1956	1404	1281	123	9	379	27	373	6	1.6	1025	73	908	117	11
1957	1449	1327	122	8	341	24	331	10	2.9	1108	76	996	112	10
1958	1465	1321	144	10	340	23	334	6	1.8	1125	77	987	138	12
1959	1427	1307	120	8	376	26	368	8	2.1	1051	74	939	112	11
50-59	13,733	12,592	1,141	8	4,090	30	4,023	67	1.6	9,643	70	8,569	1,074	11
1960	1647	1521	126	8	440	27	433	7	1.6	1207	73	1088	119	10
1961	1646	1502	144	9	450	27	443	7	1.6	1196	73	1059	137	11
1962	1804	1643	161	9	465	26	463	2	0.4	1339	74	1180	159	12
1963	1908	1724	184	10	449	24	441	8	1.8	1459	76	1283	176	12
1964	2181	1978	203	9	555	25	545	10	1.8	1626	75	1433	193	12
1965	2474	2228	246	10	529	21	516	13	2.5	1945	79	1712	233	12
1966	2696	2382	314	12	588	22	581	7	1.2	2108	78	1801	307	15
1967	2900	2546	354	12	637	22	625	12	1.9	2263	78	1921	342	15
1968	3445	2993	452	13	648	19	636	12	1.9	2797	81	2357	440	16
1969	3779	3295	484	13	699	18	687	12	1.7	3080	82	2608	472	15
60-69	24,480	21,812	2,668	11	5,460	22	5,370	90	1.6	19,020	78	16,442	2,578	14
1970	4131	3632	499	12	823	20	795	28	3.4	3308	80	2837	471	14
1971	4534	3910	624	14	874	19	846	28	3.2	3660	81	3064	596	16
1972	4478	3831	647	14	805	18	783	22	2.7	3673	82	3048	625	17
1973	4524	3790	734	16	869	19	848	21	2.4	3655	81	2942	713	20
1974	4220	3488	732	17	765	18	736	29	3.8	3455	82	2752	703	20
1975	4252	3470	782	18	832	20	801	31	3.7	3420	80	2669	751	22
1976	4203	3412	791	19	768	18	714	54	7.0	3435	82	2698	737	21
1977	4199	3408	791	19	753	18	699	54	7.2	3446	82	2709	737	21
1978	4179	3307	872	21	810	19	755	55	6.8	3369	81	2552	817	24
1979	4403	3429	974	22	804	18	743	61	7.6	3599	82	2686	913	25
70-79	43,123	35,677	7,446	17	8,103	19	7,720	383	4.7	35,020	81	27,957	7,063	20
1980	4495	3445	1050	23	827	18	729	98	11.9	3668	82	2716	952	26
1981	4669	3501	1168	25	910	19	797	113	12.4	3759	81	2704	1055	28
1982	4693	3460	1233	26	919	20	788	131	14.3	3774	80	2672	1102	29
1983	4350	3146	1204	28	986	23	860	126	12.8	3364	77	2286	1078	32
1984	4448	3253	1195	27	997	23	864	133	13.7	3880	77	2665	1215	31
1985	4489	3211	1278	28	1111	24	940	171	14.5	3792	76	2554	1238	33
1986	4352	3046	1306	30	998	23	826	172	17.8	3807	77	2527	1280	34
1987	4812	3281	1531	32	976	20	805	171	17.5	3836	80	2476	1360	35
1988	5123	3434	1689	33	1015	20	829	186	18.3	4108	80	2605	1503	37
1989	5194	3431	1763	34	1088	21	859	229	21.0	4106	79	2572	1534	37
80-87	46,625	33,208	13,417	29	9,827	21	8,297	1,530	15.6	38,094	82	25,777	12,317	32
Total	127,961	103,289	24,672	19	27,480	21	25,410	2,070	7.5	100,481	79	77,879	22,602	22

FIELD: Life Sciences

SOURCE: Earned Degrees Conferred Series, 1950-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-6
MASTERS DEGREES IN THE LIFE SCIENCES BY SUBFIELD AND SEX, 1950 – 1989

	Total Bio/Agri				Agricultural/Nat Res					Biological/Life				
Year	No.	Men	Women	%W	No.	%Ag	Men	Women	%W	No.	%Bio	Men	Women	%W
1950	4158	3624	534	13	1505	36	1492	13	0.9	2653	64	2132	521	19.6
1951	4417	3890	527	12	1568	35	1540	28	1.8	2849	65	2350	499	17.5
1952	4184	3717	467	11	1608	38	1578	30	1.9	2576	62	2139	437	17.0
1953	3568	3158	410	11	1470	41	1438	32	2.2	2098	59	1720	378	18.0
1954	3007	2649	358	12	1302	43	1279	23	1.8	1705	57	1370	335	19.6
1955	3090	2657	433	14	1364	44	1336	28	2.1	1726	56	1321	405	23.5
1956	2867	2461	406	14	1038	36	1021	17	1.6	1829	64	1440	389	21.3
1957	3019	2616	403	13	1122	37	1103	19	1.7	1897	63	1513	384	20.2
1958	3179	2721	458	14	1104	35	1089	15	1.4	2075	65	1632	443	21.3
1959	3537	2976	561	16	1183	33	1166	17	1.4	2354	67	1810	544	23.1
1960	3751	3178	573	15	1203	32	1190	13	1.1	2548	68	1988	560	22.0
1961	4085	3415	670	16	1241	30	1212	29	2.3	2844	70	2203	641	22.5
1962	4672	3887	785	17	1357	29	1321	36	2.7	3315	71	2566	749	22.6
1963	4718	3824	894	19	1261	27	1232	29	2.3	3457	73	2592	865	25.0
1964	5357	4273	1084	20	1344	25	1302	42	3.1	4013	75	2971	1042	26.0
1965	5978	4816	1162	19	1366	23	1330	36	2.6	4612	77	3486	1126	24.4
1966	5901	4681	1220	21	1666	28	1594	72	4.3	4235	72	3,087	1,148	27.1
1967	6764	5408	1356	20	1761	26	1687	74	4.2	5003	74	3,721	1,282	25.6
1968	7324	5693	1631	22	1807	25	1730	77	4.3	5517	75	3,963	1,554	28.2
1969	7838	6070	1768	23	2073	26	1974	99	4.8	5765	74	4,096	1,669	29.0
1970	7642	5677	1965	26	1807	24	1686	121	6.7	5835	76	3,991	1,844	31.6
1971	8320	6130	2190	26	2040	25	1910	130	6.4	6280	75	4,220	2,060	32.8
1972	8914	6587	2327	26	2280	26	2102	178	7.8	6634	74	4,485	2,149	32.4
1973	9080	6843	2237	25	2391	26	2188	203	8.5	6689	74	4,655	2,034	30.4
1974	9605	7195	2410	25	2524	26	2258	266	10.5	7081	74	4,937	2,144	30.3
1975	9618	7207	2411	25	2687	28	2349	338	12.6	6931	72	4,858	2,073	29.9
1976	9823	7204	2619	27	2884	29	2458	426	14.8	6939	71	4,746	2,193	31.6
1977	10707	7696	3011	28	3239	30	2740	499	15.4	7468	70	4,956	2,512	33.6
1978	10711	7485	3226	30	3484	33	2790	694	19.9	7227	67	4,695	2,532	35.0
1979	10719	7259	3460	32	3499	33	2749	750	21.4	7220	67	4,510	2,710	37.5
1980	10278	6952	3326	32	3424	33	2627	797	23.3	6854	67	4,325	2,529	36.9
1981	9731	6451	3280	34	3432	35	2,598	834	24.3	6299	65	3,853	2,446	38.8
1982	9824	6315	3509	36	3640	37	2,694	946	26.0	6184	63	3,621	2,563	41.4
1983	9720	6111	3609	37	3679	38	2,690	989	26.9	6041	62	3,421	2,620	43.4
1984	9330	5728	3602	39	3613	39	2,561	1,052	29.1	5717	61	3,167	2,550	44.6
1985	8757	5265	3492	40	3412	39	2,456	956	28.0	5345	61	2,809	2,536	47.4
1986	8572	5022	3550	41	3283	38	2,280	1,003	30.6	5289	62	2,742	2,547	48.2
1987	8831	5180	3651	41	3571	40	2,496	1,075	30.1	5260	60	2,684	2,576	49.0
1988	8559	5011	3548	41	3497	41	2,441	1,056	30.2	5062	59	2,570	2,492	49.2
1989	7727	4364	3363	44	2794	36	1,880	914	32.7	4933	64	2,484	2,449	49.6
50-59	35,026	30,469	4,557	13	13,264	38	13,042	222	1.7	21,762	62	17,427	4,335	19.9
60-69	56,388	45,245	11,143	20	15,079	27	14,572	507	3.4	41,309	73	30,673	10,636	25.7
70-79	95,139	69,283	25,856	27	26,835	28	23,230	3,605	13.4	68,304	72	46,053	22,251	32.6
80-89	91,329	56,399	34,930	38	34,345	38	24,723	9,622	28.0	56,984	62	31,676	25,308	44.4
TOTAL	277,882	201,396	76,486	28	89,523	32	75,567	13,956	15.6	188,359	68	125,829	62,530	33.2

Field: Life Sciences

SOURCE: Earned Degrees Conferred Series, 1950-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-7
BACHELORS DEGREES IN THE LIFE SCIENCES BY SUBFIELD AND SEX, 1950 – 1989

	Total Bio/Agri				Agricultural/Nal Res					Biological/Life				
Year	No.	Men	Women	%W	No.	%Ag	Men	Women	%W	No.	%Bio	Men	Women	%W
1950	39,101	34,173	4,928	12.6	14,999	38	14,837	162	1.1	24,102	62	19336	4766	19.8
1951	32,271	28,018	4,253	13.2	12,165	38	12,020	145	1.2	20,106	62	15998	4108	20.4
1952	25,231	21,426	3,805	15.1	9,595	38	9,451	144	1.5	15,636	62	11975	3661	23.4
1953	21,835	18,360	3,475	15.9	8,825	40	8,674	151	1.7	13,010	60	9686	3324	25.5
1954	21,584	18,079	3,505	16.2	7,832	36	7,687	145	1.9	13,752	64	10392	3360	24.4
1955	19,927	16,677	3,250	16.3	7,170	36	7,052	118	1.6	12,757	64	9625	3132	24.6
1956	19,890	16,508	3,382	17.0	6,117	31	6,002	115	1.9	13,773	69	10506	3267	23.7
1957	21,903	18,327	3,576	16.3	6,619	30	6,465	154	2.3	15,284	70	11862	3422	22.4
1958	23,069	19,399	3,670	15.9	6,769	29	6,677	92	1.4	16,300	71	12722	3578	22.0
1959	23,861	19,734	4,127	17.3	6,767	28	6,692	75	1.1	17,094	72	13042	4052	23.7
1960	24,141	19,650	4,491	18.6	6,335	26	6,242	93	1.5	17,806	74	13408	4398	24.7
1961	23,900	19,078	4,822	20.2	5,717	24	5,647	70	1.2	18,183	76	13431	4752	26.1
1962	25,200	19,730	5,470	21.7	5,894	23	5,804	90	1.5	19,306	77	13926	5380	27.9
1963	27,801	21,627	6,174	22.2	6,063	22	5,951	112	1.8	21,738	78	15676	6062	27.9
1964	31,611	24,398	7,213	22.8	6,194	20	6,069	125	2.0	25,417	80	18329	7088	27.9
1965	34,842	26,565	8,277	23.8	6,770	19	6,600	170	2.5	28,072	81	19965	8107	28.9
1966	34,183	26,409	7,774	22.7	7,173	21	7,019	154	2.1	27,010	79	19,390	7,620	28.2
1967	36,815	28,591	8,224	22.3	7,865	21	7,688	177	2.3	28,950	73	20,903	8,047	27.8
1968	40,383	31,167	9,216	22.8	8,328	21	8,060	268	3.2	32,055	74	23,107	8,948	27.9
1969	45,551	35,184	10,367	22.8	9,995	22	9,594	401	4.0	35,556	73	25,590	9,966	28.0
1970	49,045	38,034	11,011	22.5	11,369	23	10,872	497	4.4	37,676	72	27,162	10,514	27.9
1971	51,461	39,658	11,803	22.9	11,531	22	11,003	528	4.6	39,930	78	28,655	11,275	28.2
1972	53,484	40,790	12,694	23.7	12,488	23	11,761	727	5.8	40,996	77	29,029	11,967	29.2
1973	59,486	44,916	14,570	24.5	13,838	23	12,751	1,087	7.9	45,648	77	32,165	13,483	29.5
1974	68,226	50,390	17,836	26.1	15,125	22	13,586	1,539	10.2	53,101	78	36,804	16,297	30.7
1975	72,710	51,899	20,811	28.6	16,531	23	14,103	2,428	14.7	56,179	77	37,796	18,383	32.7
1976	77,301	53,512	23,789	30.8	18,289	24	14,798	3,491	19.1	59,012	76	38,714	20,298	34.4
1977	78,472	52,863	25,609	32.6	20,199	26	15,538	4,661	23.1	58,273	74	37,325	20,948	35.9
1978	77,138	50,184	26,954	34.9	21,027	27	15,610	5,417	25.8	56,111	73	34,574	21,537	38.4
1979	75,085	47,537	27,548	36.7	21,631	29	15,540	6,091	28.2	53,454	71	31,997	21,457	40.1
1980	71,617	44,021	27,596	38.5	21,121	29	14,616	6,505	30.8	50,496	71	29,405	21,091	41.8
1981	68,086	40,610	27,476	40.4	20,166	30	13,712	6,454	32.0	47,920	72	26,898	21,022	43.9
1982	65,041	38,115	26,926	41.4	19,235	30	12,974	6,261	32.6	45,806	72	25,141	20,665	45.1
1983	63,237	36,677	26,560	42.0	19,170	30	12,715	6,455	33.7	44,067	71	23,962	20,105	45.6
1984	59,613	34,253	25,360	42.5	17,303	29	11,600	5,703	33.0	42,310	76	22,653	19,657	46.5
1985	57,812	32,664	25,148	43.5	15,879	27	10,742	5,137	32.4	41,933	77	21,922	20,011	47.7
1986	56,465	31,643	24,822	44.0	14,740	26	9,941	4,799	32.6	41,725	78	21,702	20,023	48.0
1987	56,215	31,592	24,623	43.8	15,082	27	10,377	4,705	31.2	41,133	80	21,215	19,918	48.4
1988	54,280	29,731	24,549	45.2	14,331	26	9,820	4,511	31.5	39,949	74	19,911	20,038	50.2
1989	47,817	25,936	21,881	45.8	11,738	25	7,966	3,772	32.1	36,079	75	17,970	18,109	50.2
50-59	248,672	210,701	37,971	15.3	86,858	35	85,557	1,301	1.5	161,814	65	125,144	36,670	22.7
60-69	333,059	252,399	72,028	21.6	70,334	21	64,389	1,276	1.8	254,093	76	172,295	66,267	26.1
70-79	665,492	469,783	192625	28.9	162028	24	70,190	1,540	1.0	500,380	75	193,900	76,200	15.2
80-89	600,183	345,242	254941	42.5	168765	28	114463	54,302	32.2	431,418	72	230,779	200,639	46.5
TOTAL	1,847,406	1278125	557565	30.2	487985	26	334599	58,419	12.0	1,347,705	73	722,118	379,776	28.2

FIELD: Biological Sciences

SOURCE: Doctorate Records file and Doctorate Recipients from United States Universities, Summary Reports, 1972 - 1989, National Research Council

TABLE 8-8

AGRICULTURAL SCIENCES PhD AWARDS BY CITIZENSHIP AND VISA TYPE 1960 – 1989

YEAR	TOTAL	U.S.		TOTAL		FOREIGN Immigrant		Non-Immigrant		Citizenship Unknown
		No.	%	No.	%	No.	%	No.	%	
1960	414	306	73.9	107	25.8	16	3.9	91	22.0	1
1961	438	338	77.2	98	22.4	6	1.4	92	21.0	2
1962	470	344	73.2	126	26.8	14	3.0	112	23.8	
1963	466	365	78.3	97	20.8	7	1.5	90	19.3	4
1964	517	366	70.8	149	28.8	14	2.7	135	26.1	2
1965	576	380	66.0	189	32.8	17	3.0	172	29.9	7
1966	576	379	65.8	186	32.3	11	1.9	175	30.4	11
1967	606	408	67.3	195	32.2	13	2.1	182	30.0	3
1978	681	450	66.1	225	33.0	29	4.3	196	28.8	6
1969	720	488	67.8	229	31.8	28	3.9	201	27.9	3
1970	804	564	70.1	237	29.5	38	4.7	199	24.8	3
1971	902	597	66.2	302	33.5	65	7.2	237	26.3	3
1972	853	533	62.5	316	37.0	85	10.0	231	27.1	4
1973	854	543	63.6	308	36.1	75	8.8	233	27.3	3
1874	820	461	56.2	336	41.0	65	7.9	271	33.0	23
1975	904	563	62.3	336	37.2	70	7.7	266	29.4	5
1976	788	491	62.3	281	35.7	37	4.7	244	31.0	16
1977	782	488	62.4	283	36.2	27	3.5	256	32.7	11
1978	853	531	62.3	310	36.3	43	5.0	267	31.3	12
1979	855	544	63.5	294	34.4	29	3.4	265	31.0	17
1980	912	570	62.1	331	36.5	35	3.9	296	32.6	11
1981	982	594	59.6	360	37.7	35	4.0	325	33.7	28
1982	951	647	65.6	283	32.2	23	2.8	260	29.4	21
1983	1,015	649	62.1	343	35.1	36	3.8	307	31.2	23
1984	997	625	60.4	349	37.0	35	3.8	314	33.2	23
1985	1,111	683	60.9	402	35.8	47	3.7	355	32.0	26
1986	998	579	56.8	368	37.5	48	4.7	320	32.8	51
1987	976	584	58.5	337	35.2	48	5.3	289	29.9	55
1988	1,015	539	53.1	416	41.0	71	7.0	345	34.0	60
1989	1,088	606	55.7	400	36.8	45	4.1	355	32.6	82
TOTAL	23,924	15,215	63.6	8,193	34.2	1,112	4.6	7,081	29.6	516

TABLE 8-9

BIOLOGICAL SCIENCES PhD AWARDS BY CITIZENSHIP AND VISA TYPE 1960 – 1989

YEAR	TOTAL	U.S.		TOTAL		FOREIGN Immigrant		Non-Immigrant		Citizenship Unknown
		No.	%	No.	%	No.	%	No.	%	
1960	1,246	1,048	84.1	188	15.1	40	3.2	148	11.9	10
1961	1,244	1,020	82.0	208	16.7	35	2.8	173	13.9	16
1962	1,397	1,167	83.5	215	15.4	14	1.0	201	14.4	15
1963	1,510	1,252	82.9	246	16.3	37	2.5	209	13.8	12
1964	1,702	1,376	80.8	293	17.2	43	2.5	250	14.7	33
1965	1,963	1,583	80.6	360	18.3	53	2.7	307	15.6	20
1966	2,135	1,740	81.5	365	17.1	52	2.4	313	14.7	30
1967	2,361	1,947	82.5	378	16.0	80	3.4	298	12.6	36
1978	2,822	2,324	82.4	470	16.7	111	3.9	359	12.7	28
1969	3,084	2,586	83.9	463	15.0	123	4.0	340	11.0	35
1970	3,359	2,813	83.7	522	15.5	161	4.8	361	10.7	24
1971	3,652	3,063	83.9	511	14.0	199	5.4	312	8.5	78
1972	3,663	3,049	83.2	535	14.6	225	6.1	310	8.5	79
1973	3,731	3,085	82.7	570	15.3	251	6.7	319	8.5	76
1874	3,585	2,829	78.9	587	16.4	217	6.1	370	10.3	169
1975	3,636	3,024	83.2	532	14.6	202	5.6	330	9.1	80
1976	3,692	3,090	83.7	500	13.5	170	4.6	330	8.9	102
1977	3,484	2,909	83.5	479	13.7	160	4.6	319	9.2	96
1978	3,508	2,988	85.2	432	12.3	142	4.0	290	8.3	88
1979	3,646	3,130	85.7	429	11.8	132	3.6	297	8.2	87
1980	3,803	3,279	86.3	392	11.5	151	3.7	296	7.8	132
1981	3,804	3,279	86.8	363	10.7	124	3.3	288	7.4	162
1982	3,893	3,317	84.9	417	11.9	117	3.0	334	8.9	159
1983	3,741	3,210	85.8	437	11.7	114	3.1	322	8.6	94
1984	3,880	3,285	84.7	473	12.2	114	2.9	361	9.3	122
1985	3,792	3,143	83.0	531	14.1	108	2.9	422	11.2	118
1986	3,817	3,124	82.3	504	13.3	117	3.0	391	10.3	179
1987	3,836	2,962	77.7	647	16.9	160	4.1	492	12.8	207
1988	4,108	3,127	76.1	748	18.2	192	4.7	556	13.5	233
1989	4,106	3,100	75.5	776	18.9	177	4.3	599	14.6	230
TOTAL	94,190	77,869	82.7	13,571	14.4	3,821	4.1	9,897	10.5	2,750

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 8-10
FEDERAL WORKERS EMPLOYED IN THE BIOLOGICAL/AGRICULTURAL SCIENCES BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER, 1990

OCCUPATIONAL TITLE	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
General Biological Science	7288	1906	26.2	900	12.3	301	33.4	351	4.8	139	1.9	324	4.4	86	1.2	6388	87.7
Microbiology	2213	897	40.5	356	16.1	164	46.1	124	5.6	58	2.6	170	7.7	4	0.2	1857	83.9
Pharmacology	453	105	23.2	98	21.6	31	31.6	20	4.4	10	2.2	67	14.8	1	0.2	355	78.4
Agricultural Extension	58	17	29.3	3	5.2	2	66.7	1	1.7	1	1.7	1	1.7	0	0.0	55	94.8
Ecology	489	112	22.9	17	3.5	6	35.3	5	1.0	9	1.8	3	0.6	0	0.0	472	96.5
Zoology	118	20	16.9	6	5.1	2	33.3	1	0.8	2	1.7	3	2.5	0	0.0	112	94.9
Physiology	625	148	23.7	67	10.7	20	29.9	16	2.6	20	3.2	31	5.0	0	0.0	558	89.3
Entamology	740	70	9.5	60	8.1	11	18.3	12	1.6	20	2.7	26	3.5	2	0.3	680	91.9
Toxicology	211	69	32.7	31	14.7	10	32.3	8	3.8	1	0.5	20	9.5	2	0.9	180	85.3
Botany	269	112	41.6	15	5.6	5	33.3	3	1.1	8	3.0	3	1.1	1	0.4	254	94.4
Plant Pathology	329	47	14.3	27	8.2	5	18.5	9	2.7	2	0.6	15	4.6	1	0.3	302	91.8
Plant Physiology	358	67	18.7	30	8.4	11	36.7	6	1.7	2	0.6	21	5.9	1	0.3	328	91.6
Plant Protection & Quarant	1421	264	18.6	463	32.6	112	24.2	59	4.2	241	17.0	156	11.0	7	0.5	958	67.4
Horticulture	114	32	28.1	10	8.8	0	0.0	3	2.6	1	0.9	6	5.3	0	0.0	104	91.2
Genetics	357	73	20.4	30	8.4	6	20.0	3	0.8	5	1.4	21	5.9	1	0.3	327	91.6
Range Conservaton	1235	188	15.2	105	8.5	17	16.2	2	0.2	70	5.7	5	0.4	28	2.3	1130	91.5
Soil Conservation	4863	568	11.7	579	11.9	48	8.3	320	6.6	132	2.7	27	0.6	100	2.1	4284	88.1
Forestry	6321	984	15.6	407	6.4	71	17.4	43	0.7	124	2.0	69	1.1	171	2.7	5914	93.6
Soil Science	1741	176	10.1	150	8.6	13	8.7	91	5.2	23	1.3	18	1.0	18	1.0	1591	91.4
Agronomy	328	10	3.0	23	7.0	0	0.0	5	1.5	12	3.7	5	1.5	1	0.3	305	93.0
Agricultural Management	3990	541	13.6	414	10.4	541	130.7	246	6.2	113	2.8	20	0.5	35	0.9	3576	89.6
Gen Fish & Wildlife Admi	208	12	5.8	8	3.8	12	150.0	5	2.4	2	1.0	1	0.5	0	0.0	200	96.2
Fishery Biology	1687	276	16.4	126	7.5	276	219.0	27	1.6	29	1.7	44	2.6	26	1.5	1561	92.5
Wildlife Refuge Manageme	600	64	10.7	36	6.0	64	177.8	5	0.8	19	3.2	3	0.5	9	1.5	564	94.0
Wildlife Biology	2172	517	23.8	137	6.3	517	377.4	9	0.4	64	2.9	24	1.1	40	1.8	2035	93.7
Animal Science	133	18	13.5	8	6.0	18	225.0	3	2.3	2	1.5	2	1.5	1	0.8	125	94.0
Park Ranger	5440	1268	23.3	413	7.6	96	23.2	167	3.1	126	2.3	35	0.6	85	1.6	5027	92.4
Envt Protection Speci	3194	1312	41.1	420	13.1	223	53.1	234	7.3	82	2.6	76	2.4	28	0.9	2774	86.9
TOTALS	46955	9873	21.0	4939	10.5	2582	52.3	1778	3.8	1317	2.8	1196	2.5	648	1.4	42016	89.5

FIELD: Health Sciences

SOURCE: Doctorate Records File and Doctorate Recipients from United States Universities, Summary Reports, 1972-1989, National Research Council

TABLE 8-11
HEALTH SCIENCES PhDs BY SUBFIELD AND SEX, 1960 - 1989

	Total				Women				% Women						
	1986	1987	1988	1989	1986	1987	1988	1989	'20-72	'73-82	'83-85	1986	1987	1988	1989
HEALTH SCIENCES	772	806	867	985	479	477	543	638	11.7	29.0	56.9	62.0	59.2	62.6	64.8
Audiology & Speech Pathology (1)	82	107	93	90	59	75	61	67	25.2	31.0	62.7	72.0	70.1	65.6	74.4
Environmental Health (3)	39	29	52	35	12	9	18	8		21.4	29.4	30.8	31.0	34.6	22.9
Dentistry (2)									4.2						
Public Health	103	96	122	126	63	52	74	84			59.0	61.2	54.2	60.7	66.7
Epidemiology	81	86	98	108	51	47	58	64			59.2	63.0	54.7	59.2	59.3
Public Health & Epidemiology (5)									16.5	40.7					
Nursing (3)	215	214	246	314	213	203	235	304		95.8	95.5	99.1	94.9	95.5	96.8
Pharmacy	106	136	95	111	25	31	28	37	5.5	12.3	26.0	23.6	22.8	29.5	33.3
Hospital Administration (4)									5.9	3.8					
Optometry, Ophthalmology (2)									5.7						
Pharmacology									10.0	20.3					
Medicine & Surgery (6)									5.5	0.0					
Veterinary Medicine	41	31	48	49	13	5	17	13	1.2	10.9	25.4	31.7	16.1	35.4	26.5
Health Sciences, General (7)	28	19	23	23	8	8	11	11	13.5	20.6	29.8	28.6	42.1	47.8	47.8
Health Sciences, Other (7,8)	77	88	90	129	35	47	41	50	21.3	29.4	44.8	45.5	53.4	45.6	38.8

(1) Added in 1968 as "Speech & Hearing Sciences." Name changed to "Health Sciences: in 1983. (2) Dropped in 1961. Now included in "Health Sciences, Other." (3) Added in 1978. (4) Dropped in 1978. Now included in "Health Sciences, Other." (5) "Epidemiology" added in 1977. Two fields broken out in 1983. (6) Dropped as a separate field in 1977. (7) Added in 1962 as "Medical Sciences..." Name changed to "Health Sciences" in 1983. (8) Included "Psychiatry" which was dropped as a separate field in 1962.

FIELD: Medicine

SOURCE: Journal of the American Medical Association, Vol. 238, No. 26, 1977; Vol. 243, No. 9, 1980; Vol. 246, No. 25, 1981: Vol. 248 No. 24 1982; "Medical School Enrollments, 1973-74, 1973-74 thru 1977-78"; "Undergraduate Medical Education," Vol. 250, No. 12; Journal of Medical Education, Vol. 53, 1978; and personal communications with the Association of American Medical Colleges.

TABLE 8-12
APPLICANTS, FIRST YEAR, AND TOTAL ENROLLMENTS AND GRADUATES IN U.S. MEDICAL SCHOOLS BY SEX
1968 – 1990

Year	Applicants			First-Year Enrollment			Total Enrollment			Graduates		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
1968-69	21,118	2,097	9.9	9,863	887	9.0	35,833	3,165	8.8	8,049	607	7.5
1969-70	24,465	2,289	9.4	10,401	952	9.2	37,669	3,390	9.0	8,367	700	8.4
1970-71	24,987	2,734	10.9	11,348	1,256	11.1	40,487	3,894	9.6	8,974	827	9.2
1971-72	29,172	3,737	12.8	12,261	1,693	13.8	43,650	4,755	10.9	8,551	860	10.1
1972-73	36,135	5,480	15.2	13,726	2,315	16.9	47,546	6,099	12.8	10,391	924	8.9
1973-74	40,506	7,202	17.8	14,185	2,743	19.3	45,886	7,731	16.8	11,613	1,264	10.9
1974-75	42,624	8,712	20.4	14,963	3,260	21.8	54,074	9,786	18.1	12,714	1,706	13.4
1975-76	42,303	9,575	22.6	15,351	3,656	23.8	56,244	11,527	20.5	13,561	2,200	16.2
1976-77	42,135	10,244	24.3	15,667	3,876	24.7	58,266	13,059	22.4	13,607	2,611	19.2
1977-78	40,569	10,195	25.1	16,136	4,130	25.6	60,039	14,218	23.7	14,393	3,086	21.4
1978-79	36,636	9,561	26.1	16,630	4,184	25.2	62,213	15,293	24.6	14,966	3,445	23.0
1979-80	36,141	10,222	28.3	16,886	4,748	28.1	63,800	16,315	25.6	15,135	3,497	23.1
1980-81	36,100	10,644	29.5	17,204	4,970	28.9	65,497	17,375	26.5	15,667	3,892	24.8
1981-82	36,727	11,673	31.8	17,320	5,343	30.8	66,485	18,555	27.9	15,985	3,991	25.0
1982-83	35,730	11,685	32.7	17,230	5,445	31.6	66,886	19,627	29.3	15,728	4,193	26.7
1983-84	35,200	11,961	34.0	17,150	5,653	33.0	67,327	20,635	30.6	16,343	4,632	28.3
1984-85	35,944	12,476	34.7	16,997	5,715	33.6	67,016	21,316	31.8	16,318	4,904	30.1
1985-86	32,893	11,562	35.2	16,963	5,800	34.2	66,585	21,650	32.5	16,117	4,957	30.8
1986-87	31,323	11,267	36.0	16,819	5,894	35.0	66,125	22,100	33.4	15,830	5,107	32.3
1987-88	28,123	10,546	37.5	16,686	6,098	36.5	65,735	22,481	34.2	15,919	5,215	32.8
1988-89	26,721	10,180	38.1	16,781	6,254	37.3	65,300	22,855	35.0	15,630	5,221	33.4
1989-90	29,243	11,785	40.3	16,876	6,550	38.8	65,163	24,286	37.3	15,398	5,231	34.0
								Total Graduates---		299,256	69,070	23.1

FIELD: Medicine

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, Public Health Service, May 1974: and Minority Students in Medical Education: Facts and Figures V, and "Facts," Association of American Medical Colleges Office of Minority Affairs, 1990

TABLE 8-13

FIRST YEAR AND TOTAL ENROLLMENT IN U.S. MEDICAL SCHOOLS BY MINORITY GROUP FOR SELECTED YEARS, 1971 – 1990

FIRST YEAR				Black American				American Indian				Mexican American				MainInd Puerto Rican				Other Hispanic				Asian/Pacific Isl.				Total Minority			
YEA	Total	Wome	%W	No.	%B	Wom	%W	No.	%AI	Wom	%W	No.	%M	Wom	%W	No.	%PR	Wom	%W	No.	%H	Wom	%W	No.	%PI	Wom	%W	No.	M	Wom	%W
1971	12361	1693	13.7	882	7.1	200	22.6	23	0.2	8	34.8	118	1.0	10	8.5	40	0.3	6	15.0					217	1.8	42	19.4	1280	10.3	266	20.8
1974	14763	3260	22.1	1106	7.5			71	0.5			227	1.5			69	0.5							275	1.9			1748	11.8		
1975	15295	3647	23.8	1036	6.8	376	36.2	60	0.4	21	35.0	224	1.5	46	20.5	71	0.5	24	33.8	41	0.3	9	22.0	282	1.8	86	30.5	1714	11.2	562	32.8
1977	16136	4130	25.6	1085	6.7	443	40.8	51	0.3	15	29.4	246	1.5	66	26.8	68	0.4	23	33.8	157	1.0	43	27.4	395	2.4	115	29.1	2002	12.4	705	35.2
1978	16501	4173	25.3	1061	6.4	446	42.0	47	0.3	12	25.5	260	1.6	66	25.4	75	0.5	32	42.7					452	2.7			1895	11.4	556	29.3
1979	16930	4713	27.8	1108	6.5	495	44.6	63	0.4	16	25.4	290	1.7	74	25.5	86	0.5	30	34.9	188	1.1	59	31.4	502	3.0	154	30.7	2237	13.2	828	37.0
1980	17186	4996	29.1	1128	6.6	513	45.4	67	0.4	24	35.8	258	1.5	79	30.6	95	0.6	41	43.2	224	1.3			572	3.3			2344	13.6	657	28.0
1981	17268	5317	30.8	1196	6.9	517	43.2	70	0.4	19	27.1	300	1.7	91	30.3	105	0.6	46	43.8	247	1.4			765	4.4			2683	15.5	673	25.1
1982	17254	5462	31.7	1145	6.6	495	43.2	62	0.4	26	41.9	305	1.8	91	29.8	114	0.7	41	36.0	278	1.6			936	5.4			2840	16.4	653	23.0
1983	17150	5653	33.0	1173	6.8	544	46.3	75	0.4	38	50.7	301	1.8	102	33.9	109	0.6	44	40.4	248	1.4	76	30.6	983	5.7	337	34.3	2889	16.8	1141	39.5
1984	16395	5469	33.6	971	6.8	477	49.0	67	0.5	23	35.1	290	1.9	79	28.3	112	0.7	45	40.7	229	1.4	82	35.8	1091	6.7	386	35.4	2760	16.8	1092	39.6
1985	16268	5520	34.2	923	6.6	486	52.1	52	0.4	25	50.0	292	2.0	105	35.3	121	0.8	46	37.5	250	1.5	75	30.0	1248	7.7	420	33.7	2886	17.7	1157	40.1
1986	16103	5574	35.0	991	7.0	502	51.1	54	0.4	20	41.0	288	2.0	98	36.6	97	0.7	35	40.5	268	1.6	94	35.1	1461	9.1	521	35.7	3159	19.6	1270	40.2
1987	15927	5767	36.5	994	7.3	550	54.4	63	0.4	27	42.6	281	1.8	99	35.4	103	0.7	36	35.3	257	1.7	94	36.6	1784	11.2	658	36.9	3482	21.8	1464	42.0
1988	15969	5878	36.8	997	6.2	551	55.2	68	0.4	35	51.5	260	1.6	110	42.3	106	0.7	48	45.3	264	1.7	94	35.6	2014	12.6	750	37.2	3709	23.2	1588	42.8
1989	15867	6025	38.0	1099	6.9	558	50.7	73	0.5	31	42.5	275	1.7	96	34.9	123	0.8	53	43.1	293	1.8	128	43.7	2144	13.5	818	38.2	4007	25.2	1684	42.0
1990	15998	6153	38.5	1055	6.6	589	55.8	63	0.4	24	38.1	251	1.6	100	39.8	101	0.6	42	41.6	291	1.8	114	39.2	2431	15.2	935	38.5	4192	26.2	1804	43.0
ALL YEARS																															
1971	43650	4755	10.9	2055	4.7	420	20.4	42	0.1	10	23.8	252	0.6	24	9.5	76	0.2	13	17.1					647	1.5	116	17.9	3072	7.03	583	19.0
1974	53554	9786	18.3	3355	6.3			157	0.3			638	1.2			172	0.3							959	1.8			5281	9.86		
1975	55818	11417	20.5	3456	6.2	1157	33.4	172	0.3	45	26.2	699	1.3	129	18.5	197	0.4	51	25.9	144	0.3	35	24.3	1022	1.8	256	25.0	5690	10.1	1673	29.4
1977	60039	14218	23.7	3587	6.0	1371	38.2	201	0.3	55	27.4	831	1.4	189	22.7	261	0.4	89	34.1	426	0.7	99	23.2	1422	2.4	417	29.3	6728	11.2	2220	33.0
1978	62213	15293	24.6	3537	5.7			202	0.3			882	1.4			277	0.4							1592	2.6			6490	10.4		
1979	63800	16141	25.3	3627	5.7	1549	42.7	212	0.3	55	25.9	964	1.5	229	23.8	283	0.4	104	36.7	567	0.9	160	28.2	1777	2.8	518	29.2	7430	11.6	2615	35.2
1980	65189	17373	26.7	3708	5.7			221	0.3			951	1.5			329	0.5			683	1.0			1924	3.0			7816	11.9		
1981	66298	18555	28.0	3884	5.9			229	0.3			1040	1.6			350	0.5			847	1.3			2518	3.8			8868	13.3		
1982	66748	19627	29.4	3869	5.8			235	0.4			1071	1.6			369	0.6			962	1.4			2936	4.4			9442	14.1		
1983	67327	20635	30.6	3892	5.8	1748	44.9	258	0.4	95	36.8	1082	1.6	352	32.5	368	0.5	143	38.9	983	1.5	285	29.0	3290	4.9	1101	33.5	9873	14.6	3724	37.7
1984	67016	21316	31.8	3944	5.9	1802	45.7	257	0.4	92	35.8	1126	1.7	359	31.9	380	0.6	154	40.5	987	1.5	291	29.5	3763	5.6	292	7.8	10457	15.6	2990	28.6
1985	66585	21350	32.1	3849	5.8	1796	46.7	235	0.4	95	40.4	1143	1.7	366	32.0	428	0.6	162	37.9	991	1.5	312	31.5	4289	6.4	316	7.4	10935	16.4	3047	27.9
1986	66125	22100	33.4	3892	5.9	1914	49.2	242	0.4	101	41.7	1153	1.7	394	34.2	435	0.7	162	37.2	1015	1.5	332	32.7	4883	7.4	326	6.7	11620	17.5	3229	27.8
1987	65735	22544	34.3	3968	6.0	2056	51.8	233	0.4	93	39.9	1144	1.7	379	33.1	467	0.7	175	37.5	1038	1.6	355	34.2	5738	8.7	332	5.8	12588	19.1	3390	26.9
1988	65300	22985	35.2	3995	6.1	2150	53.8	237	0.4	102	43.0	1128	1.7	408	36.2	438	0.7	172	39.3	1091	1.7	377	34.6	6595	10.1	340	5.2	13484	20.6	3549	26.3
1989	65016	23513	36.2	4145	6.4	2258	54.5	258	0.4	108	41.9	1087	1.7	396	36.4	452	0.7	189	41.8	1181	1.8	438	37.1	7489	11.5	311	4.2	14612	22.4	3700	25.3
1990	65063	24286	37.3	4241	6.5	2367	55.8	277	0.4	118	42.6	1109	1.7	427	38.5	457	0.7	197	43.1	1176	1.8	454	38.6	8436	13.0	303	3.6	15696	24.1	3866	24.6

* Starting in 1984 data includes only new entrants. Prior years include repeating students.

FIELD: Medicine

SOURCE: Journal of the American Medical Association, v. 234, No. 13, 1975; v. 238, No. 26, 1977; v. 240, No. 26, 1978; Minority Students in Medical Education: Facts and Figures V. Association of American Medical College Office of Minority Affairs, 1989.

TABLE 8-14

ENROLLED MEDICAL STUDENTS REPEATING CLASSES – SELECTED YEARS – 1973 – 1987

1st-Year Class	Total Minority			Black Americans			American Indian			Mexican Amer.			Puerto Rican*			Other Hispanic			Asian/Pacific Is			All Other Students		
	Total	Rep	%	Total	Rep	%	Total	Rep	%	Total	ep	%	Total	Rep	%	Total	ep	%	Total	ep	%	Total	Rep	%
1973	1270	144	11.3	995	120	12.1	41	8	19.5	178	8	4.5	56	8	14.3							12642	142	1.1
1975	1419	192	13.5	1052	159	15.1	61	4	6.6	228	21	9.2	78	8	10.3							13808	157	1.1
1977	2220	188	8.5	1101	142	12.9	51	5	9.8	238	22	9.2	231	2	0.9	174	10	5.7	425	7	1.6	13914	225	1.6
1979	2602	225	8.6	1118	157	14.0	67	4	6.0	285	25	8.8	336	22	6.5	224	7	3.1	572	10	1.7	14601	287	2.0
1980	2566	276	10.8	1127	195	17.3	69	10	14.5	259	30	11.6	306	21	6.9	222	9	4.1	583	11	1.9	14638	288	2.0
1981	3096	286	9.2	1145	198	17.3	62	6	9.7	305	27	8.9	343	21	6.1	278	15	5.4	963	19	2.0	14185	324	2.3
1982	2903	269	9.3	1083	171	15.8	62	7	11.3	293	31	10.6	343	30	8.7	263	14	5.3	859	16	1.9	14327	297	2.1
1983	3275	287	8.8	1148	184	16.0	77	8	10.4	329	38	11.6	354	23	6.5	243	10	4.1	1124	24	2.1	13722	316	2.3
1984	2999	262	8.7	1045	166	15.9	79	6	7.6	303	36	11.9	352	19	5.4	233	11	4.7	987	24	2.4	13993	271	1.9
1985	3703	312	8.4	1174	194	16.5	61	8	13.1	331	39	11.8	347	15	4.3	276	9	3.3	1514	47	3.1	13716	383	2.8
1986	4043	280	6.9	1221	171	14.0	68	6	8.8	308	37	12.0	336	25	7.4	283	10	3.5	1827	31	1.7	12670	293	2.3
1987	4335	301	6.9	1210	191	15.8	76	5	6.6	295	27	9.2	366	18	4.9	288	22	7.6	2100	38	1.8	12533	383	3.1
All Other Classes																								
1973	2478	128	5.2	1966	102	5.2	52	3	5.8	334	18	5.4	126	5	4.0							33477	202	0.6
1975	3176	181	5.7	2436	140	5.7	115	6	5.2	490	26	5.3	135	9	6.7							37306	262	0.7
1977	5246	235	4.5	2550	161	6.3	154	8	5.2	599	34	5.7	590	7	1.2	293	9	3.1	1060	16	1.5	39076	286	0.7
1979	5800	211	3.6	2546	128	5.0	135	13	9.6	675	29	4.3	708	15	2.1	413	4	1.0	1323	22	1.7	41381	291	0.7
1980	6003	221	3.7	2592	149	5.7	157	7	4.5	698	24	3.4	744	15	2.0	442	6	1.4	1370	20	1.5	42290	313	0.7
1981	6495	233	3.6	2620	159	6.1	161	5	3.1	713	23	3.2	840	19	2.3	573	9	1.6	1588	18	1.1	42670	295	0.7
1982	6951	270	3.9	2646	153	5.8	171	5	2.9	741	34	4.6	930	33	3.5	650	14	2.2	1813	31	1.7	42705	263	0.6
1983	7224	246	3.4	2583	144	5.6	182	8	4.4	753	39	5.2	956	17	1.8	683	12	1.8	2067	26	1.3	43044	328	0.8
1984	7553	252	3.3	2618	148	5.7	175	14	8.0	750	12	1.6	946	32	3.4	705	10	1.4	2359	36	1.5	42545	306	0.7
1985	7756	294	3.8	2526	165	6.5	169	11	6.5	739	31	4.2	937	31	3.3	715	17	2.4	2670	39	1.5	41919	288	0.7
1986	8798	281	3.2	2695	164	6.1	185	6	3.2	799	30	3.8	1003	13	1.3	748	15	2.0	3368	53	1.6	40565	329	0.8
1987	9628	305	3.2	2832	151	5.3	168	4	2.4	833	34	4.1	1031	22	2.1	766	21	2.7	3998	73	1.8	39428	355	0.9

* Mainland only before 1977, then Mainland and Commonweal

FIELD: Medicine

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, Public Health Service, May 1984; and Minority Students in Medical Education: Facts and Figures V, Association of American Medical Colleges Office of Minority Affairs, 1989 and "Facts", AAMCOMA, 1990

TABLE 8-15

M.D. DEGREES AWARDED TO U.S. WOMEN, BY MINORITY STATUS, 1980 – 1990

YEAR	Number Degrees	Black		Indian		Mexican		Puerto Rican		Minority*		Asian	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1980	3,526	308	8.7	7	0.2	40	1.1	31	0.9	386	10.9		
1981	3,902	343	8.8	12	0.3	51	1.3	20	0.5	426	10.9		
1982	4,007	348	8.7	12	0.3	59	1.5	31	0.8	450	11.2		
1983	4,232	388	9.2	12	0.3	53	1.3	25	0.6	478	11.3		
1984	4,632	378	8.2	20	0.4	59	1.3	32	0.7	489	10.6	217	4.7
1985	4,904	372	7.6	18	0.4	77	1.6	38	0.8	505	10.3	238	4.9
1986	4,957	350	7.1	15	0.3	72	1.5	37	0.7	474	9.6	296	6.0
1987	5,107	362	7.1	30	0.6	79	1.5	28	0.5	499	9.8	324	6.3
1988	5,215	409	7.8	20	0.4	67	1.3	43	0.8	539	10.3	393	7.5
1989	5,221	425	8.1	25	0.5	83	1.6	46	0.9	579	11.1	436	8.4
1990	5,321	453	8.5	19	0.4	83	1.6	37	0.7	592	11.1	514	9.7
TOTAL	51,024	4,136	8.1	190	0.4	723	1.4	368	0.7	5,417	10.6	2,418	16.7

* Excludes Asians.

FIELD: Medicine

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, Public Health Service, May 1974; and Minority Students in Medical Education: Facts and Figures V, Association of American Medical Colleges Office of Minority Affairs, 1989

TABLE 8-16

U.S. MEDICAL SCHOOL FACULTY BY SEX AND ETHNIC ORIGIN, SELECTED YEARS, 1975 –1988

Year	Total*			Black				Indian				Mexican American				Puerto Rican				Other Hispanic				Asian				White			
	No.	Wom	%W	No.	%B	Wom	%W	No.	%I	W	%W	No.	%M	Wom	%W	No.	%P	Wo	%W	No.	%H	Wom	%W	No.	%A	Wom	%W	No.	%W	Wom	%W
1975	40578	6119	15.1	733	1.8	197	26.9	14	0.0	2	14.3	74	0.2	10	13.5	275	0.7	65	23.6	566	1.4	67	11.8	2383	5.9	443	18.6	33309	82.1	4883	14.7
1978	47140	7153	15.2	820	1.7	201	24.5	22	0.0	2	9.1	89	0.2	13	14.6	320	0.7	75	23.4	621	1.3	77	12.4	2824	6.0	560	19.8	38641	82.0	5681	14.7
1981	47701	7822	16.4	810	1.7	246	30.4	37	0.1	7	18.9	105	0.2	17	16.2	311	0.7	93	29.9	686	1.4	105	15.3	3319	7.0	755	22.7	39232	82.2	6109	15.6
1985	52464	9285	17.7	950	1.8	307	32.3	47	0.1	9	19.1	124	0.2	15	12.1	323	0.6	100	31.0	788	1.5	137	17.4	3783	7.2	883	23.3	43564	83.0	7274	16.7
1986	57803	10583	18.3	1040	1.8	344	33.1	47	0.1	10	21.3	129	0.2	17	13.2	443	0.8	123	27.8	833	1.4	147	17.6	4061	7.0	951	23.4	46763	80.9	8142	17.4
1988	60181	11673	19.4	1103	1.8	373	33.8	52	0.1	10	19.2	152	0.3	25	16.4	396	0.7	110	27.8	914	1.5	173	18.9	4437	7.4	1082	24.4	49441	82.2	9112	18.4

* Includes those whose race or ethnic origin in unknown.

FIELD: Medicine

SOURCE: Journal of the American Medical Association, Vol. 234, No. 13, 1975; Vol. 238, No. 26, 1977; Vol. 240, No. 26, 1978; Vol. 243 No. 9 1980; Vol. 246, No. 25, 1981; Vol. 248, No. 24, 1982; Vol. 250, No. 12, 1983, Copyright by A.M.A. Fact sheets dated 2-28-85 and 10-18-85, and Minority Students in Medical Education: FActs and Figures V, Association of American Medical Colleges and personnal communications with AMC.

TABLE 8-17

MINORITY GRADUATES IN MEDICINE BY SEX, SELECTED YEARS 1970 – 1990

Year	Total			Black				Am. Indian/Alaskan Nat				Mexican American				Puerto Rican				Asian/Pacific Isl.			
	No.	Women	%W	No.	%B	Wom	%W	No.	%I	Wom	%W	No.	%M	Wom	%W	No.	%PR	Wom	%W	No.	%A	Wom	%W
1970	8,367			165	2.0			4	0.0			10	0.1			9	0.1						
1973	10,391			341	3.3			8	0.1			39	0.4			10	0.1						
1975	12,714			638	5.0			22	0.2			110	0.9			28	0.2						
1977	13,607			752	5.5			29	0.2			144	1.1			38	0.3						
1978	14,393			793	5.5			47	0.3			172	1.2			176	1.2			319	2.2		
1979	14,966			774	5.2			49	0.3			194	1.3			190	1.3			350	2.3		
1981	15,667			773	4.9			42	0.3			201	1.3			223	1.4			414	2.6		
1982	15,985			763	4.8			45	0.3			225	1.4			222	1.4			459	2.9		
1983	15,802			883	5.6			45	0.3			228	1.4			289	1.8			493	3.1		
1984	16,343	4,632	28.3	818	5.0	378	46.2	59	0.4	20	33.9	220	1.3	59	26.8	302	1.8	100	33.1	679	4.2	217	32.0
1985	16,318	4,904	30.1	837	5.1	378	45.2	65	0.4	18	27.7	242	1.5	77	31.8	318	1.9	97	30.5	750	4.6	238	31.7
1986	16,118	4,957	30.8	824	5.1	350	42.5	49	0.3	15	30.6	233	1.4	72	30.9	89	0.6	37	41.6	909	5.6	295	32.5
1987	15,830	5,107	32.3	920	5.8	362	39.3	63	0.4	30	47.6	226	1.4	79	35.0	81	0.5	28	34.6	947	6.0	324	34.2
1988	15,919	5,215	32.8	850	5.3	409	48.1	58	0.4	20	34.5	241	1.5	67	27.8	112	0.7	43	38.4	1119	7.0	393	35.1
1989	15,630	5,221	33.4	821	5.3	425	51.8	57	0.4	25	43.9	245	1.6	83	33.9	124	0.8	46	37.1	1241	7.9	426	34.3
1990	15,398	5,231	34.0	874	5.7	453	51.8	52	0.3	19	36.5	249	1.6	83	33.3	93	0.6	37	39.8	1433	9.3	514	35.9
Totals	233,448	35,267	31.6	11,826	5.1	2,755	46.3	694	0.3	147	36.5	2,979	1.3	520	31.4	2,304	1.0	388	34.7	9,113	3.9	2,407	34.0

SOURCE: Women in Engineering, Medicine and Science, by Vera Kistlakowsky, TheConference on Women in Science and Engineering, National Research Council, June 11-12, 1973; and Journal of the American Medical Association, Vol. 234, No. 13, December 1975; Vol. 243, No. 9, March 1980; and Vol. 246, No. 25, December 1981; copyright by AMA; and Office of Minority Affairs, Association of American Medical Colleges, 1985 and 1990

TABLE 8-18

ENROLLMENTS AND GRADUATES IN U.S. MEDICAL SCHOOLS BY SEX SELECTED YEARS, 1914 – 1990

Year	No. of Schools	Enroll-ment	Women Students		M.D. Grads.	Women Graduates	
			No.	%		No.	%
1914–15	96	14,891	583	3.9	3,536	92	2.6
1924–25	80	18,200	910	5.0	3,974	204	5.1
1934–45	77	22,888	1,077	4.7	5,101	207	4.1
1954–55	81	28,583	1,537	5.4	6,977	345	4.9
1964–65	88	32,428	2,503	7.7	7,409	503	6.8
1974–75	114	53,554	9,661	18.0	12,714	1,706	13.4
1979–80	126	63,800	16,315	25.6	15,135	3,497	23.1
1984–85	127	67,016	21,316	31.8	16,318	4,904	30.1
1989–90	127	65,163	24,286	37.3	15,398	5,231	34.0

SOURCE: Journal of the American Medical Association; Dec 22/29, 1989 - Vol 262. No. 24

TABLE 8-19

PERCENT WOMEN IN MEDICAL SPECIALTIES, 1986

MEDICAL SPECIALTY	TOTAL	MEN	WOMEN	% Wom
Pediatrics	36,518	23,461	13,057	35.8
Physical Medicine & Rehabilitation	3,531	2,527	1,004	28.4
Psychiatry	32,724	25,788	6,936	21.2
Obstetrics & Gynecology	30,364	24,228	6,136	20.2
Dermatology	6,822	5,587	1,235	18.1
Anesthesiology	23,146	19,168	3,978	17.2
Internal Medicine	91,333	75,650	15,683	17.2
Family Medicine	67,687	58,963	8,724	12.9
Neurology	8,264	7,059	1,205	14.6
Pathology	15,515	12,195	2,220	14.3
Emergency Medicine	12,297	10,703	1,594	13.0
Radiology	22,215	19,546	2,669	12.0
Occupational Medicine	2,668	2,433	235	8.8
Ophthalmology	15,180	13,932	1,248	8.2
Plastic & Reconstructive Surgery	4,185	3,942	243	5.8
Surgery	37,214	35,205	2,009	5.4
Colon & Rectal Surgery	835	813	22	2.6
Brain Surgery	4,126	4,022	104	2.5
Urology	8,980	8,870	110	1.2
Orthopedic Surgery	17,653	17,333	320	1.8
TOTAL	441,257	371,425	68,732	15.6

FIELD: Health Professions

SOURCE: Seventh Report to the President and Congress on the Status of Health Personnel in the U.S., Health Resources and Services Administration.

TABLE 8-20

HEALTH PERSONNEL BY OCCUPATION AND SEX, 1988 AND PROJECTED TO 2020

	Veterinarians			Pharmacists			Optometrists			Dentists			Physicians		
Year	Total	Women	% W	Total	Women	% W	Total	Women	% W	Total	Women	% W	Total	Women	% W
1988	47,500	9,900	20.8	157,800	41,800	26.5	26,100	3,000	11.5	146,800	11,300	7.7	544,830	81,640*	15.0
1990	51,000	12,200	23.9	161,600	46,400	28.7	27,100	3,800	14.0	149,700	13,600	9.1	601,060	104,160	17.3
2000	65,100	22,200	34.1	181,400	69,500	38.3	33,100	9,400	28.4	154,600	24,700	16.0	721,600	163,840	22.7
2010	75,200	34,400	45.7	200,500	90,500	45.1	38,800	14,500	37.4	151,200	34,900	23.1	Not Avail	Not Avail	
2020	80,800	36,500	45.2	213,800	105,900	49.5	41,700	18,000	43.2	140,700	42,400	30.1	848,620	252,790	29.8

FIELD: Dentistry

SOURCE: Women's Participation in First-Professional Degree Programs in Medicine, Dentistry, Veterinary Medicine and Law, 1969-70 through 1974-75, NCES 76-023; Annual Report on Dental Education Series 1975-176 - 1987-88, American Dental Association

TABLE 8-21

APPLICANTS, ENROLLMENTS, GRADUATES, U.S. DENTAL SCHOOLS, BY SEX, 1989-69 THRU 1988-89

Year	Applicants			1st Year Enrollment			Total Enrollment			Graduates		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
1968-69				4,203	46	1.1	15,408	167	1.1	3,457	36	1.0
1969-70	10,325	120	1.2	4,354	69	1.6	16,136	227	1.4	3,748	36	1.0
1970-71	10,410	160	1.5	4,639	103	2.2	16,510	274	1.7	3,777	46	1.2
1971-72	11,102	302	2.7	5,103	160	3.1	17,433	355	2.0	3,894	46	1.2
1972-73	13,478	506	3.8	5,337	224	4.2	18,376	511	2.8	3,961	40	1.0
1973-74	14,820	727	4.9	6,123	423	6.9	19,215	892	4.6	4,478	88	2.0
1974-75	14,850	1,193	8.0	5,828	638	10.9	20,163	1,403	7.0	4,513	92	2.0
1975-76	15,734	*		5,763	707	12.3	20,767	1,861	9.0	4,969	156	3.1
1976-77	14,807	*		5,935	802	13.5	21,013	2,349	11.2	5,336	248	4.6
1977-78	12,835	*		5,954	880	14.8	21,510	2,796	13.0	5,177	369	7.1
1978-79	11,753	*		6,301	1,000	15.9	22,176	3,112	14.0	5,324	634	11.9
1979-80	10,520	*		6,132	1,076	17.5	22,482	3,482	15.5	5,424	634	11.7
1980-81	9,601	1,960	20.4	6,030	1,194	19.8	22,842	3,879	17.0	5,256	715	13.6
1981-82	8,852	1,861	21.0	5,955	1,268	21.3	22,621	4,227	18.7	5,550	825	14.9
1982-83	7,724	1,722	22.3	5,498	1,223	22.2	22,235	4,457	20.0	5,371	838	15.6
1983-84	7,124	1,779	25.0	5,371	1,313	24.4	21,428	4,733	22.1	5,274	1,089	20.6
1984-85	6,490	*		5,047	1,369	27.1	20,588	4,899	23.8	5,371	1,063	19.8
1985-86	6,216	*		4,843	1,324	27.3	19,563	4,944	25.3	4,958	1,094	22.1
1986-87	5,724	1,790	31.3	4,554	1,387	30.5	18,673	5,068	27.1	4,744	1,144	24.1
1986-88	5,398	*		4,370	1,410	32.3	17,885	5,253	29.4	4,581	1,263	27.6
1987-89	5,019	*		4,169	1,395	33.5	17,094	5,265	30.8			
							Total Graduates --			95,163	10,456	11.0

* Not available

TABLE 8-22

FIRST-YEAR ENROLLMENT IN U.S. DENTAL SCHOOLS BY MINORITY GROUP FOR SELECTED YEARS, 1972 - 1988

Year	Total	Black			Indian			Hispanic			Asian			All Minority		
		Total	%B	om	Total	%I	Wom	Total	%H	Wom	Total	%A	Wom	Total	%M	Wom
1972	5,287	266	5.0		5	0.1		56	1.1		138	2.6		465	8.8	
1977	5,954	296	5.0		10	0.2		110	1.8		225	3.8		641	10.8	
1978	6,235	280	4.5		16	0.3		122	2.0		263	4.2		681	10.9	
1979	6,066	274	4.5		19	0.3		163	2.7		289	4.8		745	12.3	
1980	6,030	283	4.7		12	0.2		160	2.7		317	5.3		772	12.8	
1981	5,855	299	5.1		21	0.4		183	3.1		373	6.4		876	15.0	
1982	5,498	289	5.3		16	0.3		187	3.4		387	7.0		879	16.0	
1983	5,274	276	5.2		19	0.4		172	3.3		406	7.7		873	16.6	
1984	5,047	299	5.9	135	17	0.3	4	264	5.2	106	465	9.2	154	1,045	20.7	399
1985	4,843	281	5.8	129	16	0.3	6	312	6.4	122	496	10.2	182	1,105	22.8	439
1986	4,554	286	6.3	135	9	0.2	4	316	6.9	128	499	11.0	194	1,110	24.4	461
1987	4,370	280	6.5	140	20	0.5	9	358	8.3	143	636	14.7	246	1,294	30.0	538
1988	4,196	288	6.9	138	21	0.5	5	316	7.5	122	681	16.2	269	1,306	31.1	534

SOURCE: Supplement 5, Annual Report 88/89, Dental Education, American Dental Association

TABLE 8-23
DENTAL SCHOOL FACULTY BY WORK TYPE, MINORITY GROUP AND SEX 1986–87 AND 1988–89

	1986–87						1988–89						Change '87 - '89		
	Total		Clinical		Science		Total		Clinical		Science				
Faculty	No.	%T	No.	%C	No.	%S	No.	%T	No.	%C	No.	%S	Tot	Clin	Sci
Total	6053		4611		1442		5805		4509		1296		-287	-102	-146
Women	1520	24.4	1135	24.6	385	26.7	1541	26.0	1248	27.7	293	22.6	23	113	-92
Black	410	6.4	329	7.1	81	5.6	389	6.4	325	7.2	64	4.9	-21	-4	-17
Men	320	5.0	257	5.6	63	4.4	295	4.8	245	5.4	50	3.9	-25	-12	-13
Women	90	1.4	72	1.6	18	1.2	94	1.5	80	1.8	14	1.1	4	8	-4
Hispanic	258	4.0	221	4.8	37	2.6	264	4.3	233	5.2	31	2.4	6	12	-6
Men	204	3.2	176	3.8	28	1.9	203	3.3	180	4.0	23	1.8	-1	4	-5
Women	54	0.8	45	1.0	9	0.6	61	1.0	53	1.2	8	0.6	7	8	-1
Indian	28	0.4	21	0.5	7	0.5	32	0.5	22	0.5	10	0.8	4	1	3
Men	25	0.4	19	0.4	6	0.4	27	0.4	19	0.4	8	0.6	2	0	2
Women	3	0.0	2	0.0	1	0.1	5	0.1	3	0.1	2	0.2	2	1	1
Asian	498	7.8	360	7.8	138	9.6	526	8.6	403	8.9	123	9.5	28	43	-15
Men	409	6.4	285	6.2	124	8.6	429	7.0	321	7.1	108	8.3	20	36	-16
Women	89	1.4	75	1.6	14	1.0	97	1.6	82	1.8	15	1.2	8	7	1

SOURCE: Earned Degrees Conferred Series, 1969-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-24
PHARMACY DEGREES AWARDED BY SEX AND LEVEL OF DEGREE 1968–69 – 1988–89

	BACHELORS			MASTERS			DOCTORATES		
YEAR	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1968-69	4,172	692	16.6	232	33	14.2	74	4	5.4
1969-70	4,543	853	18.8	229	38	16.6	79	11	13.9
1970-71	4,593	951	20.7	194	40	20.6	94	1	1.1
1971-72	4,668	1,088	23.3	221	49	22.2	101	8	7.9
1972-73	5,070	1,277	25.2	167	36	21.6	296	75	25.3
1973-74	5,773	1,560	27.0	240	44	18.3	132	16	12.1
1974-75	6,487	1,821	28.1	285	75	26.3	206	46	22.3
1975-76	7,018	2,137	30.5	307	60	19.5	82	8	9.8
1976-77	7,495	2,434	32.5	274	72	26.3	75	10	13.3
1977-78	7,468	2,712	36.3	320	91	28.4	96	13	13.5
1978-79	6,919	2,759	39.9	330	89	27.0	104	23	22.1
1979-80	7,122	2,919	41.0	380	117	30.8	89	16	18.0
1980-81	6,640	2,910	43.8	336	120	35.7	108	17	15.7
1981-82	6,367	2,930	46.0	368	135	36.7	127	21	16.5
1982-83	5,708	2,795	49.0	331	123	37.2	111	25	22.5
1983-84	5,480	2,706	49.4	333	118	35.4	153	48	31.4
1984-85	5,011	2,668	53.2	282	107	37.9	147	47	32.0
1985-86	5,130	2,766	53.9	277	103	37.2	185	49	26.5
1986-87	5,022	2,809	55.9	265	116	43.8	199	58	29.1
1987-88	5,277	3,024	57.3	244	102	41.8	174	60	34.5
1988-89	5,486	3,248	59.2	251	107	42.6	178	64	36.0
TOTALS	121,449	47,059	38.7	5,866	1,775	30.3	2,810	620	22.1

FIELD: Pharmacy

SOURCE: Degrees Conferred by Schools and Colleges of Pharmacy 1988-89, American Association of Colleges of Pha

TABLE 8-25

PHARMACY DEGREES CONFERRED BY LEVEL OF DEGREE, ETHNIC GROUP AND SEX

1977 – 1989

YEA	White American			Black American			Hispanic American			Asian American			American Indian			Foreign			Total(1)			
	M	F	%W	M	F	%B	M	F	%H	M	F	%A	M	F	%I	M	F	%F	M	F	Total	%F
Bachelor of Science and First Professional Degrees																						
1977	4851	2188	86	107	119	3	139	176	4	142	103	3	6	3	0.1	260	98	4	5510	2690	8200	33
1978	4522	2395	87	125	112	3	128	173	4	140	118	3	5	1	0.1	156	77	3	5093	2889	7982	36
1979	4158	2516	86	116	159	4	100	189	4	147	122	3	13	2	0.2	1[illegible]	70	3	4677	3069	7746	40
1980	3985	2511	85	113	140	3	97	182	4	164	131	4	7	1	0.1	148	84	3	4541	3071	7612	40
1981	3603	2773	85	90	147	3	135	235	5	140	153	4	1	4	0.1	153	91	3	4127	3406	7533	45
1982	3233	2749	85	96	160	4	88	156	3	167	159	5	8	6	0.2	149	77	3	3753	3313	7066	47
1983	2810	2596	81	90	174	4	97	171	4	148	177	5	5	3	0.1	164	117	4	3370	3275	6645	49
1984	2469	2475	79	102	150	4	138	84	4	152	195	6	6	4	0.2	211	130	5	3183	3111	6294	49
1985	2228	2537	80	113	150	4	99	148	4	121	206	5	3	4	0.1	195	141	6	2764	3195	5959	54
1986	2162	2526	78	122	199	5	91	132	4	137	202	6	7	4	0.2	226	202	7	2745	3265	6010	54
1987	2084	2645	78	102	131	4	100	165	4	125	152	5	4	4	0.1	189	176	6	2612	3454	6066	57
1988	2149	2918	80	95	192	5	84	165	4	119	219	5	6	6	0.2	178	185	6	2641	3702	6343	58
1989	2122	3089	77	97	221	5	87	165	4	160	308	7	6	6	0.2	210	220	6	2725	4056	6781	60
Master of Science Degrees																						
1977	227	64	73	3	2	1		1	0	14	4	5				62	19	20	309	90	399	23
1978	225	68	69	7	3	2		3	1	16	9	6				54	33	21	305	117	422	28
1979	228	81	71	7	3	2	2	1	1	17	9	6				42	40	19	301	134	435	31
1980	224	75	64	5	5	2	1	2	1	11	16	6				50	35	18	315	150	465	32
1981	192	113	70	8	9	4		2	0	6	8	3				64	31	22	271	163	434	38
1982	189	93	62	2	3	1	2	4	1	2	4	1	1		0.2	87	44	29	293	165	458	36
1983	183	99	66	1	1	0	1	3	1	6	4	2				58	30	21	277	149	426	35
1984	168	86	64	3	5	2	1	3	1	12	4	4				53	38	23	253	141	394	36
1985	134	81	64	2	8	3	2	1	1	8	3	3				63	35	29	210	128	338	38
1986	166	116	68	6		1	3	5	2	5	2	2	1		0.2	64	47	27	245	170	415	41
1987	136	95	66	2	4	2	2	2	1	3	8	3				43	39	24	197	151	348	43
1988	125	102	64	8	4	3	2	2	1	6	3	3		2		52	45	27	194	159	353	45
1989	131	103		6	2		1	6		14	2					73	51		226	165	391	
PhD Degrees																						
1977	91	8	60	2		1	1		1	5		3		1	0.6	48	10	35	147	19	166	11
1978	106	10	65	1		1		1	1	8	1	5				40	8	27	158	20	178	11
1979	85	13	64	1		1				4	2	4				33	13	30	125	28	153	18
1980	96	16	59	3		2	1		1	10	2	6				43	15	31	155	34	189	18
1981	112	21	74	1		1	1		1	6	2	4				32	5	21	152	28	180	16
1982	105	21	69	1		1	1		1	2	1	2				36	14	27	146	36	182	20
1983	104	28	63				1		0	6	3	4				40	22	30	154	54	208	26
1984	105	30	59	2		1	5	2	3	11	2	6				45	19	28	174	53	227	23
1985	106	34	60	2		1	1	1	1	6	4	4	1		0.4	59	18	33	175	57	232	25
1986	112	48	62	2		1	1		0	4	2	2				73	18	35	192	68	260	26
1987	119	43	57	2		1	4		1	7	6	5				64	30	33	203	80	283	28
1988	97	48	55	1	1	1	3		1	4	2	2				82	23	40	188	75	263	29
1989	104	54	53	1	3	1	2	2	1	6	4	3				68	50	39	184	116	300	39

(1) Includes other American minorities.

FIELD: Pharmacy

SOURCE: Enrollments in Schools and Colleges of Pharmacy, 1989–90 and Degrees Conferred by School and Colleges of Pharmacy 1988–89, American Association of Colleges of Pharmacy

TABLE 8-26

FINAL THREE-YEAR ENROLLMENTS AND GRADUATES OF PHARMACY SCHOOLS BY SEX, 1968-69 THRU 1989-90

Academic Year	Final 3-Year Enrollments				Bachelor Graduates		
	Total	Men	Women	%W	Total	Women	%W
1968-69*	14,753	12,069	2,684	18.2	4,031	656	16.3
1969-70	15,292	12,104	3,188	20.8	4,366	792	18.1
1970-71*	15,326	11,956	3,370	22.0	4,356	876	20.1
1971-72	16,808	12,621	4,187	24.9	4,416	997	22.6
1972-73	18,956	13,936	5,020	26.5	4,745	1,150	24.2
1973-74	21,287	15,258	6,029	28.3	5,414	1,415	26.1
1974-75	23,235	16,168	7,067	30.4	6,246	1,685	27.0
1975-76	24,416	16,303	8,113	33.2	6,994	2,057	29.4
1976-77	24,082	15,226	8,856	36.8	7,649	2541	33.2
1977-78	23,884	14,538	9,346	39.1	7,450	2,715	36.4
1978-79	23,078	13,636	9,442	40.9	7,095	2,835	40.0
1979-80	23,074	13,028	10,046	43.5	6,985	2,831	40.5
1980-81	22,093	11,839	10,254	46.4	6,908	3,144	45.5
1981-82	20,468	10,527	9,941	48.6	6,448	3,031	47.0
1982-83	19,350	9,511	9,839	50.8	5,919	2,925	49.4
1983-84	18,831	8,932	9,899	52.6	5,547	2,720	49.0
1984-85	16,872	7,722	9,150	54.2	5,144	2,788	54.2
1985-86	19,148	8,446	10,702	55.9	5,190	2,820	54.3
1986-87	20,073	8,446	11,627	57.9	5,164	2,929	56.7
1987-88	18,795	7,761	11,034	58.7	5,375	3,127	58.2
1988-89	19,365	7,690	11,675	60.3	5,721	3,408	59.6
1989-90	19,518	7,706	11,812	60.5			
TOTALS	438,704	255,423	183,281	41.8	121,163	47,442	39.2

* Excludes University of Puerto Rico.

TABLE 8-27

TOTAL ENROLLMENT IN PHARMACY BACHELOR OF SCIENCE PROGRAMS BY SEX AND MINORITY GROUP, FALL 1974 – FALL 1989

Fall	Black		Hispanic*		Indian		Asian		Foreign		Total Minority		
	Men	Wom	Men	Wom	M	W	Men	Wom	Men	Wom	Men	Women	% W
1974	433	294	357	454	26	6	398	249	735	341	1,984	1,352	40.5
1975	488	427	418	510	26	10	407	278	728	289	2,127	1,549	42.1
1976	447	491	380	582	26	11	422	303	565	237	1,860	1,640	46.9
1977	453	531	344	627	32	7	420	341	522	288	1,799	1,814	50.2
1978	338	554	338	609	21	13	488	392	459	248	1,680	1,851	52.4
1979	410	548	339	585	23	13	510	461	476	238	1,793	1,875	51.1
1980	381	564	360	574	21	15	497	538	520	320	1,802	2,029	53.0
1981	378	554	303	484	25	13	464	576	518	541	1,721	2,201	56.1
1982	389	546	315	469	21	15	425	647	628	402	1,820	2,123	53.8
1983	419	600	318	469	20	22	446	676	638	456	1,872	2,273	54.8
1984	361	606	269	434	19	17	229	369	547	398	1,438	1,851	56.3
1986	474	997	323	567	14	21	352	642	726	649	1,889	2,876	60.4
1987	486	1,051	331	590	18	21	419	776	669	673	1,923	3,111	61.8
1988	517	1,178	323	574	21	39	504	915	680	683	2,045	3,389	62.4
1989	512	1,259	310	621	19	47	560	1111	766	810	2,167	3,848	64.0
Totals	6,486	10,200	5,028	8,149	332	270	6,541	8,274	9,177	6,573	27,920	33,782	54.8

* Includes University of Puerto Rico

SOURCE: Enrollments in Schools and Colleges of Pharmacy 1989-90, American Association of Colleges of Pharmacy

TABLE 8-28

FULL-TIME GRADUATE ENROLLMENTS IN SCHOOLS OF PHARMACY BY PROGRAM TYPE, LEVEL, ETHNICITY AND SEX, FALL 1989

	Pharm. Chem./ Pharmacogmosy				Pharmachology				Pharmacy Administration				Pharmacy Practice				Pharmaceutics/ Pharmacy				Totals			
	MAs	%M	Ph	%PhD	MAs	%MA	PhD	%PhD	MAs	%MA	PhD	%PhD	MAs	%MA	PhD	%PhD	MAs	%MA	Ph	%Ph	MAs	%MA	PhD	%PhD
WHITE	47	36.7	274	45.0	92	53.8	246	62.4	81	68.6	70	61.4	59	80.8	27	75.0	40	20.3	258	37.5	319	46.4	875	47.5
Men	29	45.3	184	44.4	50	56.8	149	65.4	41	67.2	38	63.3	41	87.2	15	83.3	25	24.3	163	37.3	186	27.1	549	29.8
Women	18	28.1	90	46.2	42	50.6	97	58.4	40	70.2	32	59.3	18	69.2	12	66.7	15	16.0	95	37.8	133	19.4	326	17.7
BLACK	4	3.1	9	1.5	8	4.7	14	3.6	4	3.4	3	2.6	0	0.0	0		3	1.5	8	1.2	19	2.8	34	1.8
Men	1	1.6	5	1.2	4	4.5	7	3.1	2	3.3	1	1.7	0		0		1	1.0	4	0.9	8	1.2	17	0.9
Women	3	4.7	4	2.1	4	4.8	7	4.2	2	3.5	2	3.7	0	0.0	0		2	2.1	4	1.6	11	1.6	17	0.9
HISPANI	4	3.1	9	1.5	5	2.9	9	2.3	2	1.7	1	0.9	1	1.4	1		3	1.5	10	1.5	15	2.2	30	1.6
Men	2	3.1	7	1.7	2		4	1.8	1	1.6	0		0		0		2	1.9	4	0.9	7	1.0	15	0.8
Women	2	3.1	2	1.0	3	3.6	5	3.0	1	1.8	1	1.9	1	3.8	1		1	1.1	6	2.4	8	1.2	15	0.8
ASIAN	3	2.3	21	3.4	4	2.3	5	1.3	3	2.5	2	1.8	1	1.4	1		7	3.6	24	3.5	18	2.6	53	2.9
Men	1	1.6	9	2.2	2	2.3	3	1.3	2	3.3	2	3.3	0		0		3	2.9	15	3.4	8	1.2	29	1.6
Women	2	3.1	12	6.2	2	2.4	2	1.2	1	1.8	0	0.0	1	3.8	1		4	4.3	9	3.6	10	1.5	24	1.3
INDIAN			2	0.3	0		1												1				4	0.2
Men	0		2	0.5	0		0		0		0		0		0		0		1		0		3	0.2
Women	0		0	0.0	0		1		0		0		0		0		0		0		0		1	0.1
FOREIGN	70	54.7	294	48.3	20	11.7	119	30.2	28	23.7	38	33.3	12	16.4	7	19.4	144	73.1	387	56.3	274	39.9	845	45.9
Men	31	48.4	207	50.0	30	34.1	65	28.5	15	24.6	19	31.7	6	12.8	3	16.7	72	69.9	250	57.2	154	22.4	544	29.5
Women	39	60.9	87	44.6	32	38.6	54	32.5	13	22.8	19	35.2	6	23.1	4	22.2	72	76.6	137	54.6	162	23.6	301	16.3
TOTALS	128	100	609	100	171	100	394	100	118	100	114	100	73	100	36	100	197	100	688	100	687	100	1841	100
Men	64	50.0	414	68.0	88	51.5	228	57.9	61	51.7	60	52.6	47	64.4	18	50.0	103	52.3	437	63.5	352	51.2	1163	63.2
Women	64	50.0	195	32.0	83	48.5	166	42.1	57	48.3	54	47.4	26	35.6	18	50.0	94	47.7	251	36.5	322	46.9	687	37.3

FIELD: Optometry

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, 1987 and personal communications from the Association of Schools and Colleges of Optometry and surveys conducted by the Council on Optometric Education of the American Optometric Association.

TABLE 8-29

ENROLLMENTS IN U.S. SCHOOLS OF OPTOMETRY BY SEX AND RACE/ETHNICITY, 1973–74 – 1989–90

Fall	Total			Black American				Hispanic American				American Indian				Asian Americans				White Americans			
Year	No.	Women	%W	No.	%	Wo	%W	No.	%	Wom	%W	No.	%	Wo	%W	No.	%	Wom	%W	No.	%	Wom	%W
1973	3,529			52	1.5			39	1.1			5	0.1			141	4.0			3292	93.3		
1974	3,679			73	2.0			45	1.2			8	0.2			153	4.2			3400	92.4		
1975	3,888			83	2.1			55	1.4			5	0.1			166	4.3			3579	92.1		
1976	4,033			89	2.2			46	1.1			6	0.1			157	3.9			3735	92.6		
1977	4,440			79	1.8			55	1.2			7	0.2			153	3.4			4146	93.4		
1978	4,436			62	1.4			66	1.5			11	0.2			166	3.7			4131	93.1		
1979	4,500			56	1.2			67	1.5			13	0.3			208	4.6			4156	92.4		
1980	4,540			57	1.3			80	1.8			12	0.3			243	5.4			4148	91.4		
1981	4,541	1,077	23.7	57	1.3	28	49.1	98	2.2	26	26.5	9	0.2	3	33.3	283	6.2	102	36.0	4094	90.2	918	22.4
1982	4,561	1,173	25.7	76	1.7	38	50.0	107	2.3	33	30.8	19	0.4	6	31.6	296	6.5	115	38.9	4063	89.1	981	24.1
1984	4,460	1,340	30.0	96	2.2	50	52.1	116	2.6	40	34.5	21	0.5	6	28.6	269	6.0	150	55.8	3958	88.7	1110	28.0
1985	4,445	1,510	34.0	111	2.5	65	58.6	125	2.8	45	36.0	20	0.4	5	25.0	312	7.0	165	52.9	3877	87.2	1240	32.0
1986	4,494	1,684	37.5	116	2.6	74	63.8	136	3.0	56	41.2	13	0.3	5	38.5	348	7.8	188	53.4	3877	86.3	1361	35.1
1987	4,509	1,772	39.3	117	2.6	68	58.1	139	3.1	65	46.8	22	0.5	10	45.5	410	9.1	221	53.9	3821	84.7	1408	36.8
1988	4,708	1,977	42.0	130	2.8	84	64.6	280	5.9	150	53.6	26	0.6	8	30.8	462	9.8	259	56.1	3810	80.9	1476	38.7
TOTAL	64,763	10,533	33.2	1,254	1.9	407	57.9	1,454	2.2	415	41.5	197	0.3	43	33.1	3,771	5.8	1,200	50.3	58,087	89.7	8,494	30.9

Note: 1984–85 & 1985–86 data for women are interpolated.

TABLE 8-30

TOTAL ENROLLMENTS AND GRADUATES IN OPTOMETRY BY SEX
1969–70 – 1989–90

YEAR	NUMBER OF STUDENTS					GRADUATES*		
	Total	Men	%Men	Women	%Wom	Total	Women	Wom
1969–70	2,488	2,415	97.1	73	2.9	444	23	5.2
1970–71	2,631	2,749	97.1	82	2.9	530	12	2.3
1971–72	3,097	2,985	96.4	112	3.6	684	18	2.6
1972–73	3,328	3,158	94.9	170	5.1	692	17	2.5
1973–74	3,529	3,268	92.6	261	7.4	793	34	4.3
1974–75	3,679	3,328	90.5	351	9.5	809	39	4.8
1975–76	3,888	3,432	88.3	456	11.7	906	72	7.9
1976–77	4,023	3,491	86.8	532	13.2	923	103	11.2
1977–78	4,440	3,741	84.3	699	15.7	978	126	12.9
1978–79	4,436	3,679	82.9	757	17.1	916	140	15.3
1979–80	4,500	3,632	80.7	868	19.3	1,073	166	15.5
1980–81	4,540	3,555	78.3	985	21.7	1,096	204	18.6
1981–82	4,541	3,464	76.3	1,077	23.7	1,113	224	20.1
1982–83	4,561	3,388	74.3	1,173	25.7	1,120	246	22.0
1983–84	4,539	3,248	71.6	1,291	28.4	1,171	285	24.3
1984–85	4,460	3,069	68.8	1,391	31.2	1,117	306	27.4
1985–86	4,210	2,759	65.5	1,451	34.5	1,053	304	28.9
1986–87	4,494	2,810	62.5	1,684	37.5	1,124	399	35.5
1987–88	4,495	2,723	60.6	1,772	39.4	1,065	375	35.2
1988–89	4,708	2,731	58.0	1,977	42.0	1,115	450	40.4
1989–90	4,683	2,572	54.9	2,111	45.1			
TOTALS	85,470	66,197	77.5	19,273	22.5	18,722	3,543	18.9

* From 1973–74 thru 1987–88, the data are full-time fourth year student enrollments.
In 1988–89 the data are actual graduates. Starting in 1985–86 the data includes U.S. Territories.

SOURCE: Minorities and Women in the Health fields, Bureau of Health Resources Development, Public Health Service, May 1974; and Anual Report 1981 through 1989, American Association of Colleges of Osteopathic Medicine

TABLE 8-31

APPLICANTS, FIRST YEAR & TOTAL ENROLLMENTS AND GRADUATES IN U.S. SCHOOLS OF OSTEOPATHIC MEDICINE BY SEX, 1977-78 THRU 1988-89

	Applicants			1st Yr. Enrollment			Total Enrollment			Graduates		
YEAR	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
1977-78	3918	559	14.3	1163	192	16.5	3926	570	14.5	971	68	7.0
1978-79	3530	610	17.3	1322	222	16.8	4221	688	16.3	1004	163	16.2
1979-80	3856	765	19.8	1426	265	18.6	4571	789	17.3	1059	192	18.1
1980-81	3786	804	21.2	1496	329	22.0	4940	971	19.7	1151	202	17.5
1981-82	3885	901	23.2	1582	378	23.9	5304	1108	20.9	1017	186	18.3
1982-83	3917	965	24.6	1682	428	25.4	5822	1317	22.6	1317	261	19.8
1983-84	4045	1092	27.0	1746	460	26.3	6212	1526	24.6	1287	262	20.4
1984-85	4126	1168	28.3	1750	511	29.2	6547	1707	26.1	1474	344	23.3
1985-86	3869	1102	28.5	1760	515	29.3	6671	1768	26.5	1560	392	25.1
1986-87	3514	1109	31.6	1724	471	27.3	6640	1853	27.9	1587	412	26.0
1987-88	3326	1002	31.6	1692	490	27.3	6586	1904	27.9	1564	441	26.0
1988-89	3030	966	31.9	1772	570	29.0	6606	1985	28.9	1572	438	27.9
1989-90	3160	1068	33.8	1780	571	32.1	6614	1986	30.0	1617	485	30.0
TOTALS	47962	12111	25.3	20895	5402	25.9	74660	18172	24.3	17180	3846	22.4

SOURCE: Seventh Report to the President and Congress on the Status of Health Personnel in the U.S., Health Resources and Services Administraton.

TABLE 8-32

CHIROPRACTORS BY SEX, 1978 - 1988

Year	Total	Men	Women	%Wom
1978	23,400	22,200	1,200	5.1
1980	25,600	24,300	1,300	5.1
1982	28,300	26,300	2,000	7.1
1984	31,500	28,900	2,600	8.3
1986	35,000	31,600	3,400	9.7
1988	39,000	35,100	3,900	10.0
Totals	182,800	168,400	14,400	7.9

SOURCE: Seventh Report to the President and Congress on the Status of Health Personnel in the U.S., Health Resources and Services Administraton.

TABLE 8-33

WOMEN AND MINORITY GRADUATES OF PODIATRIC COLLEGES 1982-83 - 1987-88

Academic Year	All Graduates	Women		Minorities	
		No.	%W	No.	%M
1982-83	631	77	12.2	36	5.7
1983-84	607	77	12.7	57	9.4
1984-85	582	116	19.9	64	11.0
1985-86	612	124	20.3	64	10.5
1986-87	590	123	20.8	66	11.2
1987-88	647	160	24.7	93	14.4
Totals	3,669	677	18.5	380	10.4

FIELD: Podiatry

SOURCE: Minorities and Women in the Health fields, 1974; and Women in Health Creers, Health Resources Administration, U.S. Dept. of HEW; and personal communication, American Association of Colleges of Podiatric Medicine, October 18, 1989

TABLE 8-34

ENROLLMENTS IN COLLEGES OF PODIATRIC MEDICINE
BY SEX, FALL 1969 THRU 1988

YEAR	Total	Men	%M	Women	W
1969	1,095	1,085	99.1	10	0.9
1970	1,148	1,132	98.6	16	1.4
1971	1,268	1,252	98.7	16	1.3
1972	1,401	1,380	98.5	21	1.5
1973	1,623	1,583	97.5	40	2.5
1974	1,835	1,777	96.8	58	3.2
1975	2,081	1,981	95.2	100	4.8
1976	2,204	2,047	92.9	157	7.1
1977	2,388	2,129	89.2	259	10.8
1978	2,498	2,230	89.3	268	10.7
1979	2,531	2,226	87.9	305	12.1
1980	2,577	2,271	88.1	306	11.9
1981	2,584	2,223	86.0	361	14.0
1982	2,608	2,180	83.6	428	16.4
1983	2,556	2,080	81.4	476	18.6
1984	2,616	2,047	78.2	569	21.8
1985	2,749	2,129	77.4	620	22.6
1986	2,832	2,160	76.3	672	23.7
1987	2,790	2,110	75.6	680	24.4
1988	2,608	1,937	74.3	671	25.7

TABLE 8-35

MINORITY ENROLLMENT IN COLLEGES OF PODIATRIC MEDICINE, 1978 THRU 1988

Year	Total Students	Black		Hispanic		Am. Indian		Asian/Pac		Total Min.*	
		No.	%	No.	%	No.	%	No.	%	No.	%
1978	2,498	77	3.1	27	1.1	8	0.3	51	2.0	163	6.5
1979	2,531	93	3.7	28	1.1	5	0.2	63	2.5	189	7.5
1980	2,577	110	4.3	32	1.2	6	0.2	68	2.6	216	8.4
1981	2,584	125	4.8	40	1.5	5	0.2	68	2.6	238	9.2
1982	2,608	154	5.9	33	1.3	5	0.2	75	2.9	267	10.2
1983	2,556	170	6.7	41	1.6	9	0.4	68	2.7	288	11.3
1984	2,616	185	7.1	57	2.2	11	0.4	99	3.8	352	13.5
1985	2,749	208	7.6	71	2.6	14	0.5	110	4.0	403	14.7
1986	2,832	216	7.6	77	2.7	6	0.2	127	4.5	426	15.0
1987	2,790	236	8.5	89	3.2	8	0.3	151	5.4	489	17.5
1988	2,608	237	9.1	95	3.6	5	0.2	156	6.0	506	19.4

* May include "other" minorities

FILED: Nursing

SOURCE: Earned Degrees Conferred Series, 1969-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-36

NURSING DEGREES BY SEX AND LEVEL OF DEGREE 1969–70 – 1988–89

YEAR	BACHELORS			MASTERS			DOCTORATES		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1969–70	11,280	11,120	98.6	1,549	1,531	98.8	11	10	90.9
1970–71	12,283	12,029	97.9	1,542	1,511	98.0	7	6	85.7
1971–72	13,245	12,902	97.4	1,846	1,815	98.3	10	10	100.0
1972–73	15,526	15,063	97.0	2,093	1,983	94.7	17	13	76.5
1973–74	19,409	18,653	96.1	2,293	2,229	97.2	14	14	100.0
1974–75	23,813	22,709	95.4	2,220	2,154	97.0	16	16	100.0
1975–76	26,846	25,484	94.9	3,058	2,968	97.1	16	16	100.0
1976–77	28,402	26,870	94.6	3,257	3,155	96.9	24	22	91.7
1977–78	30,307	28,661	94.6	3,812	3,671	96.3	56	53	94.6
1978–79	31,808	30,002	94.3	4,256	4,088	96.1	68	65	95.6
1979–80	32,852	31,054	94.5	4,637	4,464	96.3	118	116	98.3
1980–81	32,794	31,140	95.0	5,096	4,899	96.1	113	109	96.5
1981–82	33,177	31,482	94.9	5,312	5,034	94.8	134	128	95.5
1982–83	31,442	29,965	95.3	4,451	4,298	96.6	124	117	94.4
1983–84	33,092	31,263	94.5	5,744	5,296	92.2	220	204	92.7
1984–85	33,654	31,717	94.2	5,761	5,303	92.0	273	246	90.1
1985–86	34,097	32,139	94.3	6,050	5,571	92.1	277	257	92.8
1986–87	33,976	32,126	94.6	6,184	5,756	93.1	275	248	90.2
1987–88	31,569	29,945	94.9	6,400	5,928	92.6	283	256	90.5
1988–89	30,086	28,504	94.7	6,466	5,930	91.7	371	344	92.7
TOTALS	539,658	512,828	95.0	82,027	77,584	94.6	2,427	2,250	92.7

SOURCE: Seventh Report to the President and Congress on the Status of Health Personnel in the U.S., Health Resources and Services Administraton.

TABLE 8-37

REGISTERED NURSES BY TYPE OF BASIC NURSING EDUCATION, 1977–1988

	1977		1980		1984		1988	
	Numb	%	Numbe	%	Numbe	%	Numbe	%
Total	1,402,000	100.0	1,662,000	100.0	1,888,000	100.0	2,033,000	100.0
Diploma	1,049,000	74.8	1,051,000	63.2	1,021,000	54.1	989,900	48.7
Associate Degree	158,500	11.3	308,600	18.6	466,700	24.7	576,200	28.3
Baccalaureate	191,500	13.7	288,000	17.3	385,000	20.4	452,000	22.2
Masters & Above	(Not Available)		1,600	0.1	2,700	0.1	1,900	0.1
Not Known	2,600	0.2	13,500	0.8	12,100	0.6	13,000	0.6

Data may not add due to rounding.

TABLE 8-38

REGISTERED NURSES BY RACIAL/ETHNIC BACKGROUND AND EMPLOYMENT STATUS, MARCH 1988

	Total		RNs Empl. in Nursing			NRs Not Empl. in Nursing		
	Est. No.	V %	Est. No.	V %	H %	Est. No.	V %	H %
Total RN Population	2,033,000	100.0	1,627,000	100.0	80.0	406,000	100.0	20.0
White (Non-Hispanic)	1,864,000	91.7	1,479,000	90.9	79.3	385,000	94.8	20.7
Black (Non-Hispanic)	74,000	3.6	65,300	4.0	88.2	8,300	2.0	11.2
Asian/Pacific Is.	47,000	2.3	44,200	2.7	94.0	2,500	0.6	5.3
Am. Indian/Alaskan	8,000	0.4	7,100	0.4	88.8	1,200	0.3	15.0
Hispanic	26,000	1.3	22,100	1.4	85.0	4,000	1.0	15.4
Not Known	14,000	0.7	9,200	0.6	65.7	4,900	1.2	35.0

Data may not add due to rounding.

FIELD: Veterinary Medicine

SOURCE: Personal Communications, Association of American Veterinary Medical Colleges

TABLE 8-39

ENROLLMENTS AND GRADUATES IN U.S. SCHOOLS OF VETERINARY MEDICINE BY SEX AND MINORITY GROUP, 1986-87, 1988-89 AND 1989-90

Year	Total			Minority			Black			Hispanic			Asian/Pac Is			Nat. American		
	No.	Women	%W	No.	Wom	%W	No.	Wom	%B	No.	Wom	%H	No.	Wom	%A	No.	Wom	%I
First Year Enrollment																		
1986-87	2,273	1,329	58.5	160	99	61.9	65	36	2.9	53	35	2.3	32	22	1.4	10	6	0.4
1988-89	2,195	1,293	58.9	170	107	62.9	64	39	2.9	61	38	2.8	32	22	1.5	13	8	0.6
1989-90	2,194	1,373	62.6	175	125	71.4	62	45	2.8	65	45	3.0	37	27	1.7	11	8	0.5
Total Enrollment																		
1986-87	8,887	4,714	53.0	569	307	54.0	202	115	2.3	197	88	2.2	122	80	1.4	48	24	0.5
1988-89	8,558	4,895	57.2	563	336	59.7	200	117	2.3	196	110	2.3	120	82	1.4	47	27	0.5
1989-90	8,456	4,995	59.1	610	381	62.5	219	137	2.6	220	130	2.6	133	91	1.6	38	23	0.4

TABLE 8-40

ENROLLMENTS AND GRADUATES IN U.S. SCHOOLS OF VETERINARY MEDICINE BY SEX, 1986-87, 1988-89 AND 1989-90

Year	First Year Enrollment			Total Enrollment			Graduates		
	Total	Women	%W	Total	Women	%W	Total	Women	%W
1968-69	1,327	120	9.0	4,779	362	7.6	1,006	56	5.6
1969-70	1,386	159	11.5	4,726	417	8.8	1,206	90	7.5
1970-71	1,439	158	11.0	4,716	444	9.4	1,252	98	7.8
1971-72	1,509	228	15.1	5,163	593	11.5	1,247	117	9.4
1972-73	1,760	327	18.6	5,439	745	13.7	1,299	133	10.2
1973-74	1,520	350	23.0	5,528	957	17.3	1,384	155	11.2
1974-75	1,792	453	25.3	5,985	1,220	20.4	1,415	225	15.9
1975-76	1,807	618	34.2	6,274	1,719	27.4	1,532	277	18.1
1976-77	1,856	598	32.2	6,571	1,805	27.5	1,586	362	22.8
1977-78	1,873	706	37.7	6,903	2,129	30.8	1,635	409	25.0
1978-79	2,086	766	36.7	7,312	2,471	33.8	1,704	499	29.3
1979-80	2,264	912	40.3	7,594	2,751	36.2	1,852	615	33.2
1980-81	2,237	987	44.1	8,154	3,220	39.5	1,931	702	36.4
1981-82	2,313	1,100	47.6	8,499	3,576	42.1	1,886	668	35.4
1982-83	2,247	1,124	50.0	8,682	4,028	46.4	2,012	822	40.9
1983-84	2,320	1,127	48.6	8,816	4,152	47.1	2,138	887	41.5
1984-85	2,327	1,140	49.0	8,917	4,376	49.1	2,149	1038	48.3
1985-86	2,282	1,265	55.4	8,938	4,536	50.7	2,104	1021	48.5
1986-87	2,273	1,329	58.5	8,887	4,714	53.0	2,104	1021	48.5
1987-88	2,207	1,246	56.5	8,751	4,816	55.0	2,219	1069	48.2
1988-89	2,185	1,293	59.2	8,558	4,895	57.2	2,212	1007	45.5
1989-90	2,194	1,373	62.6	8,456	4,995	59.1	2,142	1180	55.1
Totals	43,204	17,379	40.2	157,648	58,921	37.4	38,015	12,451	32.8

FIELD: Veterinary Medicine

SOURCE: Personal Communications, Association of American Veterinary Medical Colleges

TABLE 8-41

FACULTY OF U.S. SCHOOLS AND COLLEGES OF VETERINARY MEDICINE, 1987, '89 & '90

Year	Total	Women	%W	Minority			Black			Hispanic			Asian/Pac Is			Indian		
				No.	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W
1987	2,809	400	14.2	185														
1989	2,903	506	17.4	201	30	14.9	75	16	21.3	25	4	16.0	99	10	10.1	2	0	0.0
1990	2964	493	16.6	220	33	15.0	82	17	20.7	29	7	24.1	106	8	7.5	3	1	33.3

TABLE 8-42

AVMA* VETERINARIANS BY SEX, SELECTED YEARS, 1983-90

YEAR	TOTAL	WOMEN+	%Wom
1983	37,715	5,265	14.0
1985	40,137	6,092	15.2
1986	43,456	8,117	18.7
1989	48,017	11,115	23.1
1990	49,439	12,200	24.7

* The American Veterinary Medicine Association estimates its membership to include 80-85 percent of all veterinarians.

\+ 1990 number of women is estimated by AVMA.

SOURCE: Seventh Report to the President and Congress on the Status of Health Personnel in the U.S., Health Resources and Services Administraton.

TABLE 8-43

VETERINARIANS BY TYPE OF EMPLOYMENT AND SEX DECEMBER, 1988

Type of Employment	All		Men		Women		
	Number	V %	Number	V %	Number	V %	%W
Total	47,500	100.0	37,600	100.0	9,900	100.0	20.8
Self-employed	21,500	74.8	19,400	51.6	2,100	21.2	9.8
Private Practice	15,700	11.3	10,100	26.9	5,600	56.6	35.7
College or University.	4,600	9.7	3,300	8.8	1,300	13.1	28.3
Industry	1,200	2.5	1,100	2.9	100	1.0	8.3
Federal Government	1,600	3.4	1,400	3.7	200	2.0	12.5
Armed Forces	700	1.5	600	1.6	100	1.0	14.3
State or Local Govt.	900	1.9	800	2.1	100	1.0	11.1
Other	500	1.1	100	0.3	400	4.0	80.0

SOURCE: Earned Degrees Conferred Series, 1971-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-44

SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY DEGREES BY SEX AND LEVEL OF DEGREE 1970-71 - 1988-89

YEAR	BACHELORS			MASTERS			DOCTORS		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1970-71	1,427	1,251	87.7	845	690	81.7	70	22	31.4
1971-72	1,863	1,609	86.4	1,033	881	85.3	58	29	50.0
1972-73	2,574	2,259	87.8	1,417	1175	82.9	69	23	33.3
1973-74	3,278	2,934	89.5	1,964	1671	85.1	78	28	35.9
1974-75	3,732	3,345	89.6	2,377	2011	84.6	71	30	42.3
1975-76	3,925	3,582	91.3	3,119	2724	87.3	109	46	42.2
1976-77	3,864	3,555	92.0	3,019	2704	89.6	96	49	51.0
1977-78	3,551	3,247	91.4	3,190	2921	91.6	121	58	47.9
1978-79	3,554	3,297	92.8	3,496	3180	91.0	113	60	53.1
1979-80	3,576	3,319	92.8	3,304	3056	92.5	110	56	50.9
1980-81	3,445	3,225	93.6	3,226	2982	92.4	112	59	52.7
1981-82	3,414	3,234	94.7	3,104	2895	93.3	114	67	58.8
1982-83	2,909	2,847	97.9	2,737	2547	93.1	92	61	66.3
1983-84*	430	410	95.3	171	161	94.2	0	0	0.0
1984-85	393	376	95.7	241	225	93.4	0	0	0.0
1985-86	409	388	94.9	254	246	96.9	0	0	0.0
1986-87	2,563	2,435	95.0	2,985	2,820	94.5	89	65	73.0
1987-88	2,485	2,379	95.7	2,810	2,656	94.5	82	52	63.4
1988-89	2,486	2,379	95.7	2,763	2,616	94.7	84	63	75.0
TOTAL	49,878	46,071	92.4	42,055	38,161	90.7	1,468	768	52.3

* Redefined as Speech-language pathology and audiology. Reversed in 1986-87

SOURCE: Earned Degrees Conferred Series, 1969-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-45

HEALTH SERVICES ADMISTRATION DEGREES BY SEX AND LEVEL OF DEGREE 1968-69 - 1988-89

YEAR	BACHELORS			MASTERS			DOCTORATES		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1968-69	37	3	8.1	403	59	14.6	2	1	50.0
1969-70	32	6	18.8	479	64	13.4	7	0	0.0
1970-71	60	4	6.7	518	64	12.4	14	0	0.0
1971-72	126	55	43.7	677	102	15.1	12	0	0.0
1972-73	121	16	13.2	743	82	11.0	12	2	16.7
1973-74	185	32	17.3	990	206	20.8	21	4	19.0
1974-75	306	99	32.4	997	196	19.7	13	0	0.0
1975-76	421	150	35.6	1,139	278	24.4	11	0	0.0
1976-77	668	320	47.9	1,354	355	26.2	18	3	16.7
1977-78	1,158	716	61.8	1,565	567	36.2	12	2	16.7
1978-79	1,338	864	64.6	1,748	671	38.4	16	4	25.0
1979-80	1,692	1,154	68.2	1,698	718	42.3	13	4	30.8
1980-81	1,581	1,043	66.0	1,996	933	46.7	12	2	16.7
1981-82	1,978	1,397	70.6	1,640	805	49.1	20	5	25.0
1982-83	2,267	1,701	75.0	1,729	903	52.2	14	4	28.6
1983-84	3,014	2,442	81.0	2,176	1,215	55.8	27	12	44.4
1984-85	3,171	2,494	78.7	2,384	1,378	57.8	24	13	54.2
1985-86	3,154	2,544	80.7	2,549	1,562	61.3	26	8	30.8
1986-87	3,210	2,524	78.6	2,592	1,637	63.2	23	9	39.1
1987-88	3,242	2,609	80.5	2,873	1,835	63.9	33	18	54.5
1988-89	3,271	2,576	78.8	2,911	1,930	66.3	27	14	51.9
TOTALS	31,032	22,749	73.3	33,161	15,560	46.9	357	105	29.4

SOURCE: Earned Degrees Conferred Series, 1969-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-46

MEDICAL LAB TECHNOLOGIES DEGREES BY SEX AND LEVEL OF DEGREE
1968–69 – 1988–89

YEAR	BACHELORS			MASTERS		
	Total	Women	%Wom	Total	Women	%Wom
1968–69	2,846	2,551	89.6	28	23	82.1
1969–70	3,228	2,823	87.5	71	57	80.3
1970–71	3,145	2,755	87.6	72	55	76.4
1971–72	3,407	2,880	84.5	97	62	63.9
1972–73	3,806	3,102	81.5	95	77	81.1
1973–74	4,840	3,864	79.8	164	95	57.9
1974–75	5,087	4,005	78.7	174	91	52.3
1975–76	5,445	4,356	80.0	266	137	51.5
1976–77	5,286	4,242	80.2	333	184	55.3
1977–78	5,288	4,221	79.8	292	175	59.9
1978–79	5,235	4,143	79.1	303	179	59.1
1979–80	5,130	4,128	80.5	231	154	66.7
1980–81	4,896	4,012	81.9	233	150	64.4
1981–82	4,596	3,794	82.6	207	131	63.3
1982–83	3,249	2,631	81.0	144	69	47.9
1983–84	2,714	2,179	80.3	46	33	71.7
1984–85	2,720	2,222	81.7	28	18	64.3
1985–86	2,554	2,072	81.1	33	25	75.8
1986–87	2,226	1,747	78.5	28	22	78.6
1987–88	1,944	1,547	79.6	38	27	71.1
1988–89	1,814	1,438	79.3	24	19	79.2
TOTALS	79,456	64,712	81.4	2,907	1,783	61.3

SOURCE: Earned Degrees Conferred Series, 1969-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-47

PHYSICAL THERAPY DEGREES BY SEX AND LEVEL OF DEGREE
1968–69 – 1988–89

	BACHELORS			MASTERS		
	Both	Women	%	Both	Women	%
1968–69	1,071	922	86.1	41	30	73.2
1969–70	1,091	922	84.5	49	32	65.3
1970–71	1,306	1,045	80.0	75	56	74.7
1971–72	1,483	1,182	79.7	55	30	54.5
1972–73	1,756	1,381	78.6	78	51	65.4
1973–74	1,900	1,497	78.8	111	77	69.4
1974–75	2,121	1,615	76.1	133	85	63.9
1975–76	2,091	1,620	77.5	167	113	67.7
1976–77	2,333	1,790	76.7	162	101	62.3
1977–78	2,418	1,903	78.7	258	184	71.3
1978–79	2,651	2,079	78.4	242	154	63.6
1979–80	2,372	1,845	77.8	282	203	72.0
1980–81	2,745	2,213	80.6	250	186	74.4
1981–82	2,736	2,200	80.4	317	233	73.5
1982–83	2,581	2,074	80.4	303	198	65.3
1983–84	2,947	2,395	81.3	399	289	72.4
1984–85	3,129	2,503	80.0	400	286	71.5
1985–86	3,039	2,412	79.4	405	292	72.1
1986–87	3,239	2,571	79.4	522	395	75.7
1987–88	3,320	2,600	78.3	644	510	79.2
1988–89	3,514	2,724	77.5	757	563	74.4
TOTALS	49,843	39,493	79.2	5,650	4,068	72.0

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 8-48

FEDERAL WORKERS EMPLOYED IN MEDICAL AND HEALTH SCIENCES BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1990

OCCUPATIONAL TITLE	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
General Health Science	3118	1429	45.8	495	15.9	239	48.3	237	7.6	108	3.5	126	4.0	24	0.8	2623	84.1
Medical Officer	34893	7690	22.0	7291	20.9	1966	27.0	1147	3.3	1732	5.0	4300	12.3	112	0.3	27602	79.1
Nurse Anesthetist	494	272	55.1	62	12.6	46	74.2	33	6.7	15	3.0	12	2.4	2	0.4	432	87.4
Nurse	44803	40694	90.8	12396	27.7	11536	93.1	5901	13.2	2231	5.0	3405	7.6	859	1.9	32407	72.3
Dietitian & Nutritionist	1725	1635	94.8	380	22.0	364	95.8	198	11.5	67	3.9	93	5.4	22	1.3	1345	78.0
Occupational Therapist	705	640	90.8	137	19.4	122	89.1	61	8.7	43	6.1	31	4.4	2	0.3	568	80.6
Physical Therapist	650	459	70.6	115	17.7	84	73.0	39	6.0	62	9.5	12	1.8	2	0.3	535	82.3
Corrcetive Therapist	520	170	32.7	154	29.6	63	40.9	136	26.2	9	1.7	8	1.5	1	0.2	366	70.4
Manual Arts Therapist	188	20	10.6	25	13.3	1	4.0	16	8.5	4	2.1	4	2.1	1	0.5	163	86.7
Recreational/Creative Arts Therapist	753	389	51.7	123	16.3	56	45.5	96	12.7	23	3.1	3	0.4	1	0.1	630	83.7
Educational Therapist	45	26	57.8	9	20.0	7	77.8	9	20.0	0	0.0	0	0.0	0	0.0	36	80.0
Medical Technologist	5797	4026	69.4	1529	26.4	1038	67.9	617	10.6	281	4.8	529	9.1	102	1.8	4268	73.6
Pharmacist	4393	1693	38.5	985	22.4	556	56.4	287	6.5	196	4.5	474	10.8	28	0.6	3408	77.6
Optometrist	260	62	23.8	29	11.2	12	41.4	5	1.9	6	2.3	17	6.5	1	0.4	231	88.8
Speech Pathology & Audiolo	897	585	65.2	75	8.4	57	76.0	32	3.6	15	1.7	16	1.8	12	1.3	822	91.6
Podiatrist	271	38	14.0	34	12.5	9	26.5	20	7.4	2	0.7	10	3.7	2	0.7	237	87.5
Dental Officer	1464	205	14.0	173	11.8	42	24.3	44	3.0	62	4.2	66	4.5	1	0.1	1291	88.2
Induatrial Hygienist	1408	461	32.7	240	17.0	101	42.1	125	8.9	53	3.8	58	4.1	4	0.3	1168	83.0
Consumer Safety	1726	555	32.2	326	18.9	146	44.8	169	9.8	105	6.1	49	2.8	3	0.2	1400	81.1
Veterinary Medical Science	2155	296	13.7	445	20.6	78	17.5	129	6.0	70	3.2	234	10.9	12	0.6	1710	79.4
TOTALS	106265	61345	57.7	25023	23.5	16523	66.0	9301	8.8	5084	4.8	9447	8.9	1191	1.1	81242	76.5

SOURCE: Science and Engineering Doctorates: 1960–85, National Science Foundation, 1987; and Doctorate Recipients from United States Universities, Summary Reports, 1972–89, National Research Council

TABLE 9-1

PhD AWARDS IN THE BEHAVIORAL AND SOCIAL SCIENCES BY SUBFIELD AND SEX, 1960 – 1989

	Year of Doctorate														
	1960–69			1970–79			1980–87			1988			1989		
Subfields	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
TOTAL BEHAV & SOCIAL	25981	3816	14.7	59426	14784	24.9	54347	21559	39.3	5959	2608	43.8	6162	2796	45.4
PSYCHOLOGY	10969	2269	20.7	26139	8394	32.1	28474	13868	47.4	3062	1676	54.7	3209	1789	55.7
Clinical	3674	841	22.9	8126	2652	32.6	10594	5126	47.5	1092	610	55.9	1234	695	56.3
Cognitive(1)							444	188	40.4	83	34	41.0	79	33	41.8
Comparative(2)	115	17	14.8	218	58	26.6	100	40	37.4	7	4	57.1	8	1	12.5
Counseling(3)	679	131	19.3	2171	710	32.7	3684	1799	48.3	482	261	54.1	498	283	56.8
Developmental(4)	359	165	46.0	1647	880	53.4	1761	1152	64.9	175	131	74.9	148	116	78.4
Educational	550	156	28.4	1250	442	35.4	1271	662	51.8	103	65	63.1	106	61	57.5
Experimental(2)	1916	287	15.0	3439	834	24.3	1831	687	37.6	134	61	45.5	145	69	47.6
Exper, Compar, Physiol(2)	457	59	12.9												
Indust, Organizational(5)	436	18	4.1	732	93	12.7	846	287	32.2	118	54	45.8	102	47	46.1
Physiological(2)	517	75	14.5	1224	311	25.4	767	260	32.7	85	45	52.9	62	22	35.5
Quantitative(1)							99	32	29.1	12	5	41.7	11	6	54.5
Personality	285	60	21.1	528	190	36.0	268	120	44.9	18	8	44.4	28	17	60.7
Psychometrics	188	26	13.8	230	39	17.0	112	48	43.7	11	6	54.5	6	3	50.0
School	185	47	25.4	1046	437	41.8	1078	584	53.9	115	66	57.4	107	69	64.5
Social	1029	231	22.4	1992	598	30.0	1503	761	50.3	140	75	53.6	126	66	52.4
Psychology, General	395	118	29.9	2017	662	32.8	2432	1156	47.0	361	193	53.5	397	224	56.4
Psychology, Other	184	38	20.7	1519	488	32.1	1754	811	45.3	126	58	46.0	152	77	50.7
SOCIAL SCIENCES	15012	1547	10.3	33287	6390	19.2	25873	7891	30.5	2897	932	32.2	2953	1007	34.1
Anthropology	1015	218	21.5	3402	1180	34.7	3219	1550	47.8	325	170	52.3	324	148	45.7
Archeology	100	34	34.0	220	95	43.2	184	97							
Area Studies	101	16	15.8	377	72	19.1	187	51	27.1	16	5	31.3	17	5	29.4
Criminology(9)							300	83	28.0	43	15	34.9	34	10	29.4
Demography(1)							134	51	40.7	19	11	57.9	21	9	42.9
Econometrics	207	9	4.3	268	12	4.5	215	23	10.0	27	4	14.8	26	2	7.7
Economics	5286	245	4.6	8318	735	8.8	7053	1093	15.3	826	163	19.7	872	171	19.6
Geography	695	38	5.5	1666	168	10.1	1052	237	22.4	129	33	25.6	105	25	23.8
History of science(6)				282	67	23.8	184	57		22	10		19	9	47.4
International Relations	712	74	10.4	1121	135	12.0	738	121	16.2	77	14	18.2	92	28	30.4
Linguistics	738	168	22.8	1715	615	35.9	1424	699		166			188	106	56.4
Pol Sci & Government(7)							2448	624	25.1	392	96	24.5	432	109	25.2
Political Science(7)				2369	422	17.8	1409	304							
Pol Sci, Public Admin(7)	3123	259	8.3	4351	560	12.9									
Public Policy Studies(1)							425	158	37.4	73	25	34.2	77	28	36.4
Sociology	2538	445	17.5	6356	1812	28.5	4651	1981	42.9	449	238	53.0	435	222	51.0
Statistics	134	9	6.7	623	59	9.5	436	95	21.2	47	9	19.1	69	20	29.0
Urban Studies(8)				623	93	14.9	695	185	26.2	87	32	36.8	60	23	38.3
Social Sciences, General	65	7	10.8	300	84	28.0	224	75	35.6	28	13	46.4	25	8	32.0
Social Sciences, Other	298	25	8.4	1296	281	21.7	1119	523	45.7	171	94	55.0	157	84	53.5

(1) Introduced in 1983. (2) "Experimental, comparative, and physiological psychology" split into separate subfields in 1962. (3) Changed from "Counseling and guidance" to "Couseling" in 1963. (4) Changed from "Developmental and gerontological" to "Developmental" in 1963. (5) Changed from "Industrial and personnel" to "Industrial and organizational" in 1963. (6) "History and philosophy oof science" before 1983; introduced in 1971. (7) "Political science, public administration" split into separate subfields in 1976 with "Public administration" then not included in science or engineering fields. In 1983, "Political science and government" replaced "Political science."
(8) Introduced in 1970 as "Urban and regional planning." (9) Introduced in 1980.

SOURCE: Series of Earned Degrees Conferred, 1950–89 , National Center for Education Statistics

TABLE 9-2

BEHAVIORAL AND SOCIAL SCIENCES PhDs BY SEX AND SUBFIELD, 1950 – 1989

Total Social Sciences				Economics				Political Science				Sociology				Other			
Year	Total	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W
1950	499	48	10	200	40	9	5	127	25	10	8	98	20	18	18	74	15	11	15
1951	616	58	9	236	38	17	7	152	25	9	6	129	21	18	14	99	16	14	14
1952	601	56	9	239	40	16	7	147	24	12	8	141	23	20	14	74	12	8	11
1953	615	43	7	222	36	8	4	164	27	12	7	157	26	12	8	72	12	11	15
1954	679	58	9	245	36	12	5	153	23	10	7	184	27	28	15	97	14	8	8
1955	681	48	7	241	35	9	4	181	27	10	6	167	25	20	12	92	14	9	10
1956	777	62	8	232	30	11	5	203	26	15	7	170	22	29	17	172	22	7	4
1957	715	48	7	236	33	9	4	156	22	7	4	134	19	16	12	189	26	16	8
1958	767	65	8	239	31	5	2	170	22	6	4	150	20	28	19	208	27	26	13
1959	765	73	10	221	29	10	5	191	25	15	8	157	21	16	10	196	26	32	16
1960	841	76	9	237	28	14	6	201	24	17	8	161	19	26	16	242	29	19	8
1961	904	76	8	266	29	13	5	217	24	13	6	184	20	32	17	237	26	18	8
1962	939	76	8	268	29	15	6	214	23	12	6	173	18	26	15	284	30	23	8
1963	1055	103	10	331	31	20	6	228	22	13	6	208	20	31	15	288	27	39	14
1964	1161	98	8	385	33	17	4	263	23	21	8	198	17	29	15	315	27	31	10
1965	1290	107	8	410	32	17	4	304	24	26	9	230	18	36	16	346	27	28	8
1966	1406	144	10	458	33	22	5	336	24	29	9	244	17	36	15	368	26	57	15
1967	1682	194	12	546	32	37	7	390	23	38	10	327	19	59	18	419	25	60	14
1968	1907	214	11	600	31	35	6	457	24	52	11	367	19	68	19	483	25	59	12
1969	2112	247	12	634	30	43	7	467	22	49	10	430	20	86	20	581	28	69	12
1970	2503	298	12	794	32	52	7	525	21	56	11	534	21	104	19	650	26	86	13
1971	2778	384	14	721	26	53	7	700	25	85	12	574	21	119	21	783	28	127	16
1972	2951	397	13	794	27	60	8	758	26	80	11	636	22	136	21	763	26	121	16
1973	3145	494	16	845	27	52	6	747	24	95	13	583	19	154	26	970	31	193	20
1974	3110	572	18	788	25	75	10	766	25	111	14	632	20	177	28	924	30	209	23
1975	3123	608	19	815	26	73	9	680	22	111	16	693	22	209	30	935	30	215	23
1976	3136	690	22	763	24	81	11	723	23	121	17	729	23	218	30	921	29	270	29
1977	2995	654	22	758	25	86	11	641	21	100	16	714	24	234	33	882	29	234	27
1978	2840	688	24	706	25	80	11	636	22	119	19	599	21	223	37	899	32	266	30
1979	2699	680	25	712	26	93	13	563	21	99	18	612	23	221	36	812	30	267	33
1980	2635	713	27	677	26	102	15	535	20	107	20	583	22	228	39	840	32	276	33
1981	2639	693	26	727	28	100	14	484	18	96	20	610	23	239	39	818	31	258	32
1982	2550	691	27	699	27	96	14	513	20	112	22	558	22	207	37	780	31	276	35
1983	2507	750	30	734	29	123	17	435	17	101	23	522	21	221	42	816	33	305	37
1984	2473	759	31	729	29	109	15	457	18	105	23	520	21	231	44	767	31	314	41
1985	2470	792	32	749	30	122	16	441	18	115	26	480	19	248	52	800	32	307	38
1986	2596	849	33	789	30	157	20	439	17	115	26	504	19	227	45	864	33	350	41
1987	2444	765	31	750	31	126	17	435	18	119	27	451	18	180	40	808	33	340	42
1988	3054	1045	34	770	25	151	20	391	13	86	22	452	15	241	53	1441	47	567	39
1989	2692	1729	64	843	31	159	19	451	17	116	26	450	17	229	51	948	35	1225	129
50–59	6715	559	8	2311	34	106	5	1644	24	106	6	1487	22	205	14	1,273	19	142	11
60–69	13297	1335	10	4135	31	233	6	3077	23	270	9	2522	19	429	17	3,563	27	403	11
70–79	29280	5465	19	7696	26	705	9	6739	23	977	14	6306	22	1,795	28	8,539	29	1,988	23
80–89	26060	8786	34	7467	29	1245	17	4581	18	1072	23	5130	20	2,251	44	8,882	34	4,218	47
TOTAL	75352	16145	21	21,609	29	2,289	11	16,041	21	2,425	15	15,445	20	4,680	30	22,257	30	6,751	30

SOURCE: Earned Degrees Conferred Series, 1950-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 9-3

MASTERS DEGREES IN THE SOCIAL SCIENCES BY SUBFIELD AND SEX, 1950 – 1989

Total Social Sciences				Economics				Political Sci				Sociology				Other			
Year	No.	Women	%W	No.	%T	Women	%W	No.	%T	Women	%W	No.	%T	Women	%W	No.	%T	Women	%W
1950	2468	484	20	921	37	114	12	710	29	113	16	552	22	179	32	285	12	78	27
1951	2343	375	16	809	35	71	9	657	28	90	14	584	25	162	28	293	13	52	18
1952	2007	339	17	695	35	83	12	525	26	76	14	517	26	131	25	270	13	49	18
1953	1865	326	17	582	31	61	10	509	27	76	15	504	27	139	28	270	14	50	19
1954	1854	306	17	609	33	62	10	534	29	79	15	440	24	117	27	271	15	48	18
1955	1817	345	19	617	34	78	13	498	27	84	17	474	26	126	27	228	13	57	25
1956	1944	331	17	581	30	56	10	509	26	75	15	402	21	127	32	452	23	73	16
1957	2189	413	19	606	28	50	8	535	24	68	13	515	24	223	43	533	24	72	14
1958	2370	391	16	669	28	70	10	685	28	80	12	397	17	139	35	639	27	102	16
1959	2460	413	17	664	27	60	9	649	26	110	17	461	19	140	30	686	28	103	15
1960	2544	386	15	708	28	58	8	722	28	129	18	440	17	113	26	674	26	86	13
1961	2767	412	15	820	30	67	8	764	28	112	15	504	18	142	28	679	25	91	13
1962	3124	538	17	853	27	89	10	839	27	176	21	578	19	156	27	854	27	117	14
1963	3641	609	17	1029	28	82	8	1051	29	184	18	684	19	197	29	877	24	146	17
1964	3858	662	17	1111	29	98	9	1163	30	223	19	646	17	180	28	938	24	161	17
1965	4348	819	19	1268	29	150	12	1210	28	230	19	789	18	246	31	1081	25	193	18
1966	5243	1040	20	1,901	36	179	9	1,465	28	287	20	981	19	301	31	896	17	273	30
1967	6206	1209	19	2,147	35	180	8	1,814	29	399	22	1,193	19	356	30	1,052	17	274	26
1968	6894	1400	20	2,358	34	210	9	1,980	29	384	19	1,193	17	403	34	1,363	20	403	30
1969	7755	1635	21	2,537	33	255	10	2,149	28	416	19	1,656	21	531	32	1,413	18	433	31
1970	7981	1972	25	2,396	30	265	11	2,130	27	447	21	1,816	23	677	37	1,639	21	583	36
1971	8344	2089	25	2,415	29	276	11	2,318	28	479	21	1,815	22	679	37	1,796	22	655	36
1972	9065	2251	25	2,636	29	296	11	2,451	27	502	20	1,987	22	769	39	1,991	22	684	34
1973	9094	2291	25	2,662	29	302	11	2,399	26	480	20	1,950	21	783	40	2,083	23	726	35
1974	9358	2463	26	2,560	27	326	13	2,448	26	456	19	2,236	24	890	40	2,114	23	791	37
1975	9229	2539	28	2,522	27	351	14	2,333	25	476	20	2,135	23	816	38	2,239	24	896	40
1976	8944	2678	30	2,560	29	386	15	2,192	25	473	22	2,035	23	858	42	2,157	24	961	45
1977	8974	2753	31	2,662	30	431	16	2,223	25	504	23	1,851	21	827	45	2,238	25	991	44
1978	8320	2667	32	2,549	31	458	18	2,070	25	547	26	1,650	20	752	46	2,051	25	910	44
1979	7948	2623	33	2,468	31	450	18	2,038	26	558	27	1,451	18	694	48	1,991	25	921	46
1980	7658	2628	34	2,386	31	479	20	1,938	25	515	27	1,372	18	689	50	1,962	26	945	48
1981	7581	2725	36	2,498	33	557	22	1,876	25	534	28	1,255	17	657	52	1,952	26	977	50
1982	7566	2741	36	2,506	33	593	24	1,955	26	610	31	1,183	16	642	54	1,922	25	896	47
1983	7540	2786	37	2,568	34	611	24	1,829	24	543	30	1,157	15	642	55	1,986	26	990	50
1984	7307	2741	38	2,482	34	591	24	1,770	24	537	30	1,015	14	554	55	2,040	28	1,059	52
1985	7043	2662	38	2,532	36	612	24	1,500	21	438	29	1,045	15	575	55	1,966	28	1,037	53
1986	7126	2773	39	2,496	35	616	25	1,704	24	550	32	986	14	548	55	1,940	27	1,061	55
1987	6295	2509	40	1,865	30	476	26	1,618	26	507	31	970	15	545	56	1,842	29	981	53
1988	6272	2533	40	1,840	29	470	26	1,577	25	522	33	1,013	16	576	57	1,842	29	965	52
1989	6934	2792	40	1,870	27	532	28	1,593	23	519	33	1,143	16	649	57	2,328	34	1,092	47
50–59	21,317	3,723	17	6,753	32	704	10	5,791	27	851	15	4,846	23	1,483	31	3,927	18	684	17
60–69	46,380	8,710	19	14,732	32	1,368	9	13,157	28	2,540	19	8,664	19	2,625	30	9,827	21	2,177	22
70–79	87,257	24,326	28	25,430	29	3,541	14	22,602	26	4,922	22	18,926	22	7,745	41	20,299	23	8,118	40
80–89	71,322	26,890	38	23,043	32	5,537	24	17,360	24	5,275	30	11,139	16	6,075	55	19,780	28	10,003	51
Total	226,276	63,649	28	69,958	31	11,150	16	58,910	26	13,588	23	43,575	19	17,928	41	53,833	24	20,982	39

SOURCE: Earned Degrees Conferred Series, 1950-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 9-4

BACHELORS DEGREES IN THE SOCIAL SCIENCES BY SEX AND SUBFIELD, 1950–1989

	Total Social Sci			Economics				Political Science				Sociology				Other			
Year	No.	Women	%W	No.	%E	Women	%W	No.	%PS	Women	%W	No.	%S	Women	%W	No.	%O	Women	%W
1950	29887	6405	21	14573	49	1102	8	6346	21	980	15	7887	26	4039	51	1081	4	284	26
1951	24345	5950	24	10484	43	905	9	5582	23	884	16	7320	30	3925	54	959	4	236	25
1952	21143	5941	28	8595	41	1075	13	4925	23	909	18	6697	32	3711	55	926	4	246	27
1953	19362	5389	28	7313	38	768	11	5086	26	974	19	6102	32	3447	56	861	4	200	23
1954	18735	5386	29	6728	36	790	12	5332	28	1018	19	5702	30	3315	58	973	5	263	27
1955	18303	5251	29	6364	35	686	11	5500	30	1085	20	5533	30	3200	58	906	5	280	31
1956	19521	5435	28	6584	34	676	10	5670	29	1109	20	5916	30	3363	57	1351	7	287	21
1957	20724	5635	27	6878	33	664	10	5874	28	1109	19	6383	31	3531	55	1589	8	331	21
1958	22120	5635	25	7514	34	605	8	6167	28	1136	18	6583	30	3606	55	1856	8	288	16
1959	22945	5892	26	7723	34	644	8	6387	28	1164	18	6877	30	3750	55	1958	9	334	17
1960	23383	6259	27	7488	32	672	9	6657	28	1256	19	7182	31	4011	56	2056	9	320	16
1961	24743	6656	26	7939	32	626	8	7149	29	1445	20	7519	30	4108	55	2136	9	377	18
1962	27392	7668	28	8405	31	760	9	8390	31	1909	23	8183	30	4554	56	2414	9	445	18
1963	31246	9042	29	9399	30	914	10	10138	32	2303	23	9055	29	5270	58	2654	8	555	21
1964	36961	11140	30	10607	29	1068	10	12206	33	2738	22	11053	30	6587	60	3095	8	747	24
1965	40994	12779	31	10895	27	1039	10	13693	33	3038	22	12896	31	7773	60	3510	9	929	26
1966	46624	14906	35	12,274	26	1,144	9	15,597	28	3,431	28	15,203	35	9,064	60	3,550	8	1,267	36
1967	53685	17397	35	13,829	26	1,338	10	17,985	28	3,989	29	17,751	36	10,588	60	4,120	8	1,482	36
1968	64103	21565	36	16,207	27	1,838	10	20,823	27	4,529	28	22,062	37	13,485	61	5,011	8	1,913	38
1969	75173	25609	37	17,909	26	1,814	10	24,189	27	5,022	26	26,555	38	16,213	61	6,520	9	2,560	39
1970	82950	29488	37	18,325	24	1,889	10	26,099	27	5,207	25	30,848	40	18,403	60	7,678	10	2,989	39
1971	87319	30959	38	17,137	21	1,923	11	27,636	27	5,564	25	33,667	41	19,961	59	8,879	11	3,511	40
1972	90185	31390	37	16,408	19	1,830	11	28,319	27	5,338	23	35,630	42	20,296	57	9,828	12	3,926	40
1973	92483	32597	38	15,848	18	2,076	13	30,246	28	5,919	24	35,996	42	20,249	56	10,393	12	4,353	42
1974	93193	33589	39	15,596	18	2,158	14	30,932	28	6,199	25	35,915	41	20,590	57	10,750	12	4,642	43
1975	86428	32074	40	15,160	19	2,483	16	29,314	28	6,810	29	31,858	40	18,511	58	10,096	13	4,470	44
1976	82088	31172	42	16,025	21	2,993	19	28,515	28	7,205	34	27,992	37	16,601	59	9,556	13	4,373	46
1977	77349	30617	44	16,674	24	3,647	22	26,576	27	7,497	39	25,008	36	15,194	61	9,091	13	4,279	47
1978	75461	30972	46	17,443	26	4,110	24	26,245	27	8,168	45	23,073	34	14,612	63	8,700	13	4,082	47
1979	72775	30754	48	18,150	28	4,767	26	25,817	27	8,620	50	20,546	32	13,390	65	8,262	13	3,977	48
1980	72266	31543	50	19,736	31	5,712	29	25,658	26	9,212	56	19,181	30	12,790	67	7,691	12	3,829	50
1981	70768	31218	51	20,700	34	6,050	29	25,217	26	9,271	58	17,592	29	12,231	70	7,259	12	3,666	51
1982	71236	31603	51	21,880	36	6,843	31	25,885	26	9,859	62	16,333	27	11,444	70	7,138	12	3,457	48
1983	69477	30785	52	22,410	38	7,247	32	26,020	27	10,228	65	14,347	24	9,984	70	6,700	11	3,326	50
1984	68611	29628	51	22,874	39	7,515	33	25,943	27	10,165	64	13,347	23	9,054	68	6,447	11	3,092	48
1985	67584	29387	51	23,073	40	7,673	33	26,065	28	10,300	65	12,165	21	8,398	69	6,281	11	3,016	48
1986	69042	29994	51	23,796	41	7,954	33	26,661	28	10,580	66	12,397	21	8,535	69	6,188	11	2,925	47
1987	68119	30069	53	22,419	39	7,618	34	26,990	28	10,919	68	12,350	22	8,462	68	6,342	11	3,070	48
1988	69861	30660	52	22,997	39	7,537	33	27,333	28	10,964	67	13,085	22	8,999	69	6,446	11	3,160	49
1989	74625	33514	45	23,502	31	7,631	32	30,348	41	12,411	41	14,329	19	9,866	69	6,446	9	3,160	49
50–59	217,065	58,919	28	82,756	38	7,915	10	56,869	26	10,368	18	65,000	30	35,887	55	12,460	6	2,749	22
60–69	407,333	132,921	33	114,962	28	11,013	10	119,856	29	29,660	25	137,459	34	81,863	59	35,056	9	10,595	30
70–79	773,902	312,612	40	196,786	25	27,876	17	213,370	28	66,327	31	300,533	39	177,807	59	93,233	12	40,602	44
80–89	1,966,124	764,132	39	505,105	26	110,669	22	682,656	35	199,898	29	583,127	30	359,223	62	195,237	10	83,898	43
Total	3,364,444	1,268,584	37	899,579	26	157,473	18	1,072,750	32	306,251	29	1,086,119	32	654,579	60	335,986	10	137,844	41

FIELD: Social Sciences

SOURCE: Doctorate Recipients from United States Universities, Summary Reports, 1973–89, National Research Council

TABLE 9-7

PhD DEGREES IN SELECTED SOCIAL SCIENCES BY CITIZENSHIP & RACE/ETHNICITY 1973–89

Field & Year	Total*	Non–Cit Temp Visas	% T	Citizens and Permament Visa Non–Citizens													
				Total u.s.	Amer. Ind. No.	Amer. Ind. US	Asian No.	Asian US	Black No.	Black %US	White No.	White %US	Hispanic No.	Hispanic %U	Other/ Unkn.
ANTHROPOLOGY															
1973–76	1,518	137	9.0	1,381	9	0.7	17	1.2	26	1.9	1,149	83.2	15	1.1	165
1977–80	1,537	101	6.6	1,397	13	0.9	27	1.9	24	1.7	1,204	86.2	23	1.6	106
1981–84	1410	107	7.6	1,248	5	0.4	15	1.2	31	2.5	1114	89.3	28	2.2	55
1985	353	23	6.5	316	3	0.9	12	3.8	10	3.2	260	82.3	15	4.7	16
1986	381	29	7.6	329	2	0.6	5	1.5	4	1.2	295	89.7	14	4.3	9
1987	352	21	6.0	304	1	0.3	12	3.9	9	3.0	255	83.9	13	4.3	14
1988	325	28	8.6	276	2	0.7	7	2.5	6	2.2	240	87.0	13	4.7	8
1989	324	31	9.6	264	1	0.4	4	1.5	6	2.3	234	88.6	8	3.0	11
1973–89	6,200	477	7.7	5,515	36	0.7	99	1.8	116	2.1	4,751	86.1	129	2.3	384
SOCIOLOGY															
1973–76	2,658	255	9.6	2,403	8	0.3	46	1.9	97	4.0	1,924	80.1	22	0.9	306
1977–80	2,569	245	9.5	2,278	20	0.9	66	2.9	116	5.1	1,910	83.8	57	2.5	109
1981–84	2211	249	11.3	1,884	3	0.2	58	3.1	108	5.7	1608	85.4	61	3.2	46
1985	461	60	13.0	380		0.0	8	2.1	26	6.8	323	85.0	17	4.5	6
1986	492	68	13.8	396	4	1.0	11	2.8	25	6.3	330	83.3	14	3.5	12
1987	423	54	12.8	334	2	0.6	18	5.4	12	3.6	284	85.0	10	3.0	8
1988	449	68	15.1	342	2	0.6	13	3.8	22	6.4	282	82.5	16	4.7	7
1989	435	92	21.1	306	1	0.3	13	4.2	26	8.5	240	78.4	22	7.2	4
1973–89	9,698	1,091	11.2	8,323	40	0.5	233	2.8	432	5.2	6,901	82.9	219	2.6	498
ECONOMICS															
1973–76	3,461	816	23.6	2,645	8	0.3	90	3.4	30	1.1	2,214	83.7	16	0.6	287
1977–80	3,112	761	24.5	2,263	7	0.3	119	5.3	47	2.1	1,911	84.4	33	1.5	146
1981–84	3102	838	27.0	2,111	3	0.1	136	6.4	69	3.3	1781	84.4	44	2.1	78
1985	785	269	34.3	481	2	0.4	26	5.4	14	2.9	405	84.2	14	2.9	20
1986	836	260	31.1	519	2	0.4	28	5.4	15	2.9	450	86.7	6	1.2	18
1987	798	249	31.2	482	0	0.0	42	8.7	14	2.9	402	83.4	13	2.7	11
1988	827	290	35.1	473	0	0.0	47	9.9	15	3.2	390	82.5	12	2.5	9
1989	872	313	35.9	470	1	0.2	35	7.4	11	2.3	400	85.1	12	2.6	11
1973–89	11,296	2,944	26.1	9,444	22	0.2	399	4.2	175	1.9	6,761	71.6	113	1.2	549
POLITICAL SCIENCE															
1973–76	628	88	14.0	540	3	0.6	9	1.7	14	2.6	477	88.3	8	1.5	29
1977–80	2,243	227	10.1	1,943	6	0.3	48	2.5	100	5.1	1,639	84.4	37	1.9	113
1981–84	1720	252	14.7	1,395	2	0.1	46	3.3	87	6.2	1148	82.3	39	2.8	73
1985	407	79	19.4	292	1	0.3	10	3.4	22	7.5	236	80.8	6	2.1	17
1986	414	72	17.4	295		0.0	11	3.7	17	5.8	246	83.4	11	3.7	10
1987	405	77	19.0	287	0	0.0	9	3.1	18	6.3	243	84.7	10	3.5	7
1988	391	82	21.0	253	0	0.0	6	2.4	16	6.3	215	85.0	6	2.4	10
1989	432	90	20.8	288	1	0.3	16	5.6	17	5.9	243	84.4	5	1.7	6
1973–89	5,412	718	13.3	5,293	12	0.2	124	2.3	240	4.5	3,746	70.8	101	1.9	242

* Includes individuals who did not report their citizenship at time of doctorate

FIELD: Social Work

SOURCE: Series of Earned Degrees Conferred, 1969-89, National Center for Education Statistics

TABLE 9-5

SOCIAL WORK DEGREES BY SEX AND LEVEL OF DEGREE
1970-71 - 1988-89

	BACHELORS			MASTERS			DOCTORATES		
YEAR	Both Sexes	Women Only	% Women	Both Sexes	Women Only	% Women	Both Sexes	Women Only	% Women
1970-71	4,690	3,538	75.4	6,148	3,710	60.3	126	39	31.0
1971-72	6,223	4,661	74.9	6,656	4,049	60.8	99	31	31.3
1972-73	8,182	6,035	73.8	6,896	4,353	63.1	111	29	26.1
1973-74	9,960	7,115	71.4	7,974	4,965	62.3	109	33	30.3
1974-75	10,784	8,049	74.6	8,852	5,527	62.4	135	48	35.6
1975-76	11,032	8,350	75.7	9,002	6,012	66.8	163	73	44.8
1976-77	11,673	9,035	77.4	9,596	6,549	68.2	131	55	42.0
1977-78	12,672	9,947	78.5	9,986	6,998	70.1	138	66	47.8
1978-79	13,182	10,608	80.5	9,893	7,025	71.0	136	61	44.9
1979-80	12,870	10,503	81.6	10,158	7,326	72.1	162	81	50.0
1980-81	12,410	10,303	83.0	10,240	7,626	74.5	193	104	53.9
1981-82	11,813	9,946	84.2	9,959	7,664	77.0	198	108	54.5
1982-83	11,445	9,647	84.3	9,456	7,487	79.2	215	124	57.7
1983-84	8,824	7,576	85.9	8,547	6,788	79.4	227	132	58.1
1984-85	8,063	6,899	85.6	8,900	7,183	80.7	244	154	63.1
1985-86	7,428	6,359	85.6	8,310	6,650	80.0	208	131	63.0
1986-87	8,368	7,170	85.7	9,442	7,662	81.1	203	117	57.6
1987-88	8,471	7,304	86.2	9,344	7,608	81.4	226	137	60.6
1988-89	9,189	7,813	85.0	10,013	8,145	81.3	195	127	65.1
TOTALS	187,279	150,858	80.6	169,372	123,327	72.8	3,219	1,650	51.3

SOURCE: Foreign Participation in U.S. Science and Engineering Education and Labor Markets, Special Report, NSF 81-316, National Science Foundation; and 1980-89 Summary Report, Doctoral Recipients from United States Universities, National Research Council

TABLE 9-6

SOCIAL AND BEHAVIORAL SCIENCES PhD RECIPIENTS BY CITIZENSHIP AND VISA TYPE, 1960 - 1989

		U.S.		FOREIGN						Citizen-ship
				Total		Immigrant		Non-Immigrant		
YEAR	TOTAL	No.	%	No.	%	No.	%	No.	%	Unknown
1960	1,710	1,488	87.0	204	11.9	51	3.0	153	8.9	18
1961	1,810	1,574	87.0	204	11.3	38	2.1	166	9.2	32
1962	1,925	1,647	85.6	240	12.5	30	1.6	210	10.9	38
1963	2,035	1,759	86.4	230	11.3	59	2.9	171	8.4	46
1964	2,299	1,951	84.9	283	12.3	70	3.0	213	9.3	65
1965	2,379	2,028	85.2	315	13.2	75	3.2	240	10.1	36
1966	2,697	2,266	84.0	361	13.4	80	3.0	281	10.4	70
1967	3,160	2,666	84.4	414	13.1	126	4.0	288	9.1	80
1968	3,534	3,029	85.7	433	12.3	122	3.5	311	8.8	72
1969	4,035	3,452	85.6	504	12.5	152	3.8	352	8.7	79
1970	4,616	3,926	85.1	634	13.7	204	4.4	430	9.3	56
1971	5,285	4,503	85.2	718	13.6	242	4.6	476	9.0	64
1972	5,621	4,738	84.3	771	13.7	265	4.7	506	9.0	112
1973	5,945	4,986	83.9	846	14.2	258	4.3	588	9.9	113
1874	6,017	4,919	81.8	815	13.5	226	3.8	589	9.8	283
1975	6,209	5,253	84.6	839	13.5	228	3.7	611	9.8	117
1976	6,373	5,434	85.3	834	13.1	195	3.1	639	10.0	105
1977	6,365	5,340	83.9	805	12.6	203	3.2	602	9.5	220
1978	6,057	5,033	83.1	735	12.1	202	3.3	533	8.8	289
1979	5,943	4,957	83.4	736	12.4	179	3.0	557	9.4	250
1980	6,253	5,296	84.7	726	11.6	200	3.2	526	8.4	231
1981	6,505	5,463	84.0	772	11.9	200	3.1	572	8.8	270
1982	6,250	5,112	81.8	788	12.6	201	3.2	587	9.4	350
1983	6,055	5,020	82.9	757	12.5	187	3.1	570	9.4	278
1984	5,895	4,750	80.6	828	14.0	194	3.3	634	10.8	317
1985	5,720	4,536	79.3	875	15.3	212	3.7	663	11.6	309
1986	5,841	4,550	77.9	894	15.3	222	3.8	672	11.5	397
1987	5,718	4,351	76.1	892	15.6	242	4.2	650	11.4	475
1988	5,769	4,315	74.8	928	16.1	221	3.8	707	12.3	526
1989	5,955	4,192	70.4	1,036	17.4	225	3.8	811	13.6	727
TOTAL	132,201	110,027	83.2	17,402	13.2	4,612	3.5	12,790	9.7	4,772

Source: Science and Engineering Degrees: 1966–88, a source book, National Science Foundation, NSF 90-312 and NCES Survey of Earned Degrees, 1989

TABLE 9-8

PSYCHOLOGY DEGREES BY LEVEL AND SEX, 1966 – 1989

	Bachelors			Masters			Doctorates		
Year	Total	Women	%W	Total	Women	%W	Total	Women	%W
1966	17,022	6,981	41.0	2,530	850	33.6	1,139	245	21.5
1967	19,496	7,806	40.0	3,138	1,062	33.8	1,295	265	20.5
1968	23,972	10,144	42.3	3,482	1,159	33.3	1,464	333	22.7
1969	29,495	12,719	43.1	4,013	1,327	33.1	1,766	416	23.6
1970	33,854	14,741	43.5	4,120	1,566	38.0	1,890	444	23.5
1971	38,154	17,037	44.7	4,438	1,651	37.2	2,145	530	24.7
1972	43,421	20,154	46.4	5,293	2,033	38.4	2,279	609	26.7
1973	48,096	22,986	47.8	5,882	2,367	40.2	2,458	717	29.2
1974	52,256	26,407	50.5	6,616	2,630	39.8	2,598	801	30.8
1975	51,436	27,103	52.7	7,104	3,045	42.9	2,751	873	31.7
1976	50,363	27,376	54.4	7,859	3,671	46.7	2,883	946	32.8
1977	47,794	27,102	56.7	8,320	4,004	48.1	2,990	1,088	36.4
1978	45,057	26,540	58.9	8,194	4,263	52.0	3,055	1,127	36.9
1979	43,012	26,363	61.3	8,031	4,343	54.1	3,091	1,260	40.8
1980	42,513	26,923	63.3	7,861	4,464	56.8	3,098	1,311	42.3
1981	41,364	26,917	65.1	8,039	4,668	58.1	3,358	1,473	43.9
1982	41,539	27,783	66.9	7,849	4,621	58.9	3,159	1,438	45.5
1983	40,825	27,597	67.6	8,439	5,185	61.4	3,347	1,597	47.7
1984	40,375	27,426	67.9	8,073	5,093	63.1	3,257	1,631	50.1
1985	40,237	27,422	68.2	8,481	5,417	63.9	3,117	1,541	49.4
1986	40,937	28,246	69.0	8,363	5,426	64.9	3,124	1,598	51.2
1987	43,195	29,796	69.0	8,165	5,327	65.2	3,177	1,699	53.5
1988	45,378	31,794	70.1	7,925	5,326	67.2	3,058	1,675	54.8
1989	48,516	34,335	70.8	8,579	5,780	67.4	3,263	1,834	56.2
66–75	357,202	166,078	46.5	46,616	17,690	37.9	19,785	5,233	26.4
76–85	433,079	271,449	62.7	81,146	45,729	56.4	31,355	13,412	42.8
86–88	178,026	124,171	69.7	33,032	21,859	66.2	12,622	6,806	53.9
Total	968,307	561,698	58.0	160,794	85,278	53.0	63,762	25,451	39.9

Note: PhD data are from the Survey of Earned Doctorates. BA and Ma data are from the National Center for Education Statistics' Earned Degrees and Completions Survey

SOURCE: 1989-90 Survey of Graduate Departments of Psychology, American Psychological Association and Council of Graduate Departments of Psychology.

TABLE 9-9

FACULTY IN GRADUATE DEPARTMENTS OF PSYCHOLOGY BY SEX, RACE/ETHNICITY AND TENURE STATUS, 1989–90

DOCTORAL								
	Total	Men	Women	%Wom	Tenured	Tenure Track	Non Tenure Track	Total
Total	5323	3973	1350	25	3891	1174	224	5289
White	5004	95	90	24	96	88	89	4976
Black	159	2	6	49	2	7	7	165
Hispanic	63	1	2	35	<1	2	3	62
Asian	84	2	2	31	1	3	1	83
Native American	13	<1	<1	39	<1	<1	0	13
MASTERS								
	Total	Men	Women	%Wom	Tenured	Tenure Track	Non Tenure Track	Total
Total	1626	1181	445	27	1194	342	83	1619
White	1519	95	89	26	95	90	88	1514
Black	48	2	7	60	2	5	10	47
Hispanic	20	1	2	35	<1	2	1	19
Asian	36	2	3	31	2	2	1	36
Native American	3	<1	<1	33	<1	0	0	3

Note: Except for row and column totals, all numbers are percents. The Tenure totals are less than the Faculty totals due to under reporting of tenure status.

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 9-10

FEDERAL WORKERS EMPLOYED IN THE SOCIAL SCIENCES, PSYCHOLOGY AND WELFARE BY OCCUPATION TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1990

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
Social Science	4158	1835	44.1	1056	25.4	535	50.7	698	16.8	174	4.2	58	1.4	126	3.0	3102	74.6
Economics	5755	1379	24.0	598	10.4	233	39.0	296	5.1	118	2.1	173	3.0	11	0.2	5157	89.6
Foreign Affairs	3913	947	24.2	427	10.9	148	34.7	200	5.1	125	3.2	89	2.3	13	0.3	3486	89.1
International Relations	109	30	27.5	13	11.9	4	30.8	5	4.6	5	4.6	3	2.8	0	0.0	96	88.1
Foreign Agricultutal Affairs	200	24	12.0	12	6.0	3	25.0	7	3.5	1	0.5	2	1.0	2	1.0	188	94.0
Manpower Research and Analysis	40	16	40.0	9	22.5	4	44.4	7	17.5	0	0.0	1	2.5	1	2.5	31	77.5
Geography	290	87	30.0	19	6.6	11	57.9	9	3.1	2	0.7	6	2.1	2	0.7	271	93.4
History	690	167	24.2	37	5.4	13	35.1	21	3.0	11	1.6	3	0.4	2	0.3	653	94.6
Psychology	4239	1325	31.3	335	7.9	149	44.5	155	3.7	98	2.3	52	1.2	30	0.7	3904	92.1
Sociology	103	52	50.5	4	3.9	2	50.0	3	2.9	0	0.0	1	1.0	0	0.0	99	96.1
Social Work	4757	2535	53.3	1259	26.5	766	60.8	788	16.6	228	4.8	78	1.6	165	3.5	3498	73.5
General Anthropology	60	18	30.0	8	13.3	4	50.0	2	3.3	2	3.3	2	3.3	2	3.3	52	86.7
Archeology	952	356	37.4	52	5.5	20	38.5	3	0.3	19	2.0	4	0.4	26	2.7	900	94.5
TOTALS	25266	8771	34.7	3829	15.2	1892	49.4	2194	8.7	783	3.1	472	1.9	380	1.5	21437	84.8

SOURCE: Science and Engineering Doctorates: 1960–185, National Science Foundation, 1987; and Doctorate Recipients from United States Universities, Summary Reports, 1972–89, National Research Council

TABLE 10-1

PhD AWARDS IN THE ARTS AND HUMANITIES BY SUBFIELD AND SEX, 1920 – 1989

	CY 1920–FY 1972			FY 1973–FY 1982			FY 1983–FY 1987			FY 1988			FY 1989		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
HUMANITIES TOTAL	60,010	12,663	21.1	44,548	16,083	36.1	17,415	7,744	44.5	3,553	1,574	44.3	3,558	1,574	44.2
History, Am, Euro, Gen.& Other(1)	15,556	2,076	13.3	5,480	1,066	19.5									
History, American (1)				1,403	328	23.4	1,031	339	32.9	209	77	36.8	206	66	32.0
History, European (1)				949	273	28.8	703	245	34.9	127	51	40.2	107	36	33.6
History of Science (2)	74	10	13.5	283	107	37.8	109	40	36.7	22	10	45.5	19	9	47.4
History, Gen. & Other (1,3)				1,328	356	26.8	1,082	345	31.9	245	79	32.2	203	70	34.5
Classics (4)	2,236	682	30.5	704	244	34.7	251	98	39.0	56	22	39.3	51	18	35.3
Comparative Literature (5)				876	497	56.7	612	367	60.0	139	81	58.3	103	43	41.7
Linguistics	1,502	358	23.8	1,788	728	40.7	889	462	52.0	166	83	50.0	188	106	56.4
Speech & Debate (6)	4,357	717	16.5	931	282	30.3	194	82	42.3	36	15	41.7	35	18	51.4
Letters, General (7)							74	45	60.8	18	7	43.8	13	2	15.4
Letters, Other (7)							152	82	53.9	43	26	60.5	59	37	62.7
American Studies (8)				586	243	41.5	404	197	48.8	70	43	61.4	76	48	63.2
Archeology	314	114	36.3	250	116	46.4	144	79	54.9	23	8	34.8	27	15	55.6
Art, Fine & Applied (9)	889	246	27.7	20	4	20.0									
Art History & Criticism (9)	346	155	44.8	1,434	838	58.4	697	495	71.0	132	81	61.4	145	100	69.0
Music	2,501	348	13.9	3,824	976	25.5	2,256	734	32.5	505	154	30.5	528	175	33.1
Philosophy	5,133	631	12.3	3,557	582	16.4	1,176	253	21.5	223	53	23.8	271	67	24.7
Religion (10)				1,591	429	27.0	893	187	20.9	216	46	21.3	215	41	19.1
Theater (11)				386	154	39.9	469	196	41.8	92	45	48.9	79	39	49.4
LANGUAGE & LITERATURE	27102	7326	343.	19158	8860	46.2	6,279	3,496	55.7	1233	693	56.2	1151	684	59.4
Amer, & Eng. Lang. & Lit. (12)	11,782	2,715	23.0												
American (12)	779	235	30.2	2,157	898	41.6	970	517	53.3	186	92	49.5	193	104	53.9
English (12)	3,867	1,236	32.0	8,682	3,867	44.5	2,596	1,461	56.3	530	309	58.3	528	316	59.8
French (13)	1,529	661	43.2	2,057	1,327	64.5	520	374	71.9	100	71	71.0	105	81	77.1
German (13)	1,142	335	29.3	1,328	658	49.5	375	206	54.9	76	41	53.9	73	45	61.6
Italian (13)	108	34	31.5	203	86	42.4	88	48	54.5	14	9	64.3	20	11	55.0
Spanish (14)	1,338	451	33.7	2,012	965	48.0	705	424	60.1	137	84	61.3	133	84	63.2
Russian (13)	273	85	31.1	571	224	39.2	132	67	50.8	13	6	46.2	13	5	38.5
Slavic (13)	48	11	22.9				44	21	47.7	4	2	50.0	7	4	57.1
Chinese (15)							69	29	42.0	12	5	41.7	9	4	44.4
Japanese (15)							48	27	56.3	6	4	66.7	13	7	53.8
Hebrew (15)							57	15	26.3	11	4	36.4	11	5	45.5
Arabic (15)							38	8	21.1	14	3	21.4	6	2	33.3
Other Languages (13)	5,161	1,330	25.8	1,039	346	33.3	244	99	40.6	43	19	44.2	40	16	40.0
Humanities, General (16)	415	57	13.7	225	101	44.9	112	53	47.3	24	13	54.2	20	9	45.0
Humanities, Other	660	176	26.7	884	388	43.9	281	149	53.0	63	31	49.2	62	35	56.5

(1) Separated into "History, American, European," and "History, Other" in 1978. (2) Added in 1970 as "History and Philosophy of Science." Renamed "History of Science" in 1984. (3) "History, Other" combined with "History, General" in 1983. (4) Name changed from "Foreign Language & Lit., Classical" in 1966 and renamed "Classics" in 1983. (5) Added in 1976. (6) Originally named "Speach as a Dramatic Art," in 1962. "Dramatic Arts was added. (7) Added in 1983. (8) Added in 1973. (9) In 1968, "Art, Fine & Applied: was broken out into "Art, Applied" & "Art, History & Criticism." (10) Added in 1973. (11) Added in 1978 as "Theater and Theater Criticism." Renamed "Theater" in 1983. (12) This group was separated in 1968. (13) Called "Modern Foreign Language, Unspecified" until 1965, "Other Languages" in 1979, and separated in 1983. (14) "Spanish and Portuguese" prior to 1983(15) Separated from "Other Languages" in 1983.

SOURCE: Earned Degrees Conferred Series, 1969-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 10-2

LINGUISTICS DEGREES BY SEX AND LEVEL OF DEGREE
1955-56 THRU 1988-89

YEAR	BACHELORS			MASTERS			DOCTORATES		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1955-56 thru 1959-60	171	76	44.4	287	113	39.4			
1960-61 thru 1969-70	1127	575	51.0	2066	859	41.6			
1970-71	254	171	67.3	352	179	50.9			
1971-72	296	186	62.8	373	199	53.4			
1972-73	442	290	65.6	452	228	50.4			
1973-74	431	315	73.1	455	248	54.5			
1974-75	434	305	70.3	506	279	55.1	152	70	46.1
1975-76	534	371	69.5	523	313	59.8	190	73	38.4
1976-77	564	399	70.7	552	326	59.1	175	65	37.1
1977-78	596	408	68.5	522	313	60.0	155	77	49.7
1978-79	585	408	69.7	503	297	59.0	182	75	41.2
1979-80	553	418	75.6	522	315	60.3	176	78	44.3
1980-81	551	408	74.0	498	307	61.6	191	90	47.1
1981-82	534	376	70.4	516	305	59.1	164	86	52.4
1982-83	472	355	75.2	597	357	59.8	160	82	51.3
1983-84	476	333	70.0	678	427	63.0	176	91	51.7
1984-85	490	350	71.4	633	409	64.6	189	96	50.8
1985-86	470	329	70.0	627	419	66.8	200	107	53.5
1986-87	474	334	70.5	541	346	64.0	166	83	50.0
1987-88	475	346	72.8	527	327	62.0	138	66	47.8
1988-89	442	9	2.0	579	368	63.6	165	94	57.0
TOTALS	10,371	6,762	65.2	12,309	6,934	56.3	2,579	1,233	47.8

SOURCE: Earned Degrees Conferred Series, 1969-89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 10-3

EDUCATION DEGREES BY SEX AND LEVEL OF DEGREE
1970-71 - 1988-89

YEAR	BACHELORS			MASTERS			DOCTORATES		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1970-71	177,638	132,236	74.4	89,067	50,020	56.2	6398	1355	21.2
1971-72	192,368	142,492	74.1	98,280	56,355	57.3	7041	1660	23.6
1972-73	195,640	142,816	73.0	105,646	61,450	58.2	7314	1813	24.8
1973-74	186,623	137,088	73.5	112,739	67,553	59.9	7293	1977	27.1
1974-75	168,749	123,703	73.3	120,233	74,733	62.2	7443	2296	30.8
1975-76	156,528	114,026	72.8	128,410	82,591	64.3	7769	2593	33.4
1976-77	143,658	103,740	72.2	126,375	83,201	65.8	7955	2769	34.8
1977-78	137,742	99,842	72.5	118,957	80,548	67.7	7586	2956	39.0
1978-79	127,853	93,568	73.2	111,834	76,734	68.6	7731	3263	42.2
1979-80	120,680	89,214	73.9	103,720	72,762	70.2	7940	3521	44.3
1980-81	108,265	81,196	75.0	98,381	70,301	71.5	7900	3736	47.3
1981-82	101,063	76,678	75.9	93,104	67,333	72.3	7676	3727	48.6
1982-83	97,991	74,321	75.8	84,853	61,621	72.6	7551	3787	50.2
1983-84	92,382	70,176	76.0	77,187	55,606	72.0	7473	3770	50.4
1984-85	88,161	66,897	75.9	76,137	55,192	72.5	7151	3723	52.1
1985-86	87,221	66,235	75.9	76,353	55,634	72.9	7110	3795	53.4
1986-87	87,115	66,345	76.2	75,501	55,859	74.0	6909	3792	54.9
1987-88	91,013	70,008	76.9	77,704	58,321	75.1	6544	3600	55.0
1987-89	96,988	75,326	77.7	82,238	61,952	75.3	6783	3889	57.3
TOTALS	2,457,678	1,825,907	74.3	1,856,719	1,247,766	67.2	139,567	58,022	41.6

SOURCE: Science and Engineering Doctorates: 1960–85, National Science Foundation, 1987; and Doctorate Recipients from United States Universities, Summary Reports, 1972–89, National Research Council

TABLE 10-4

EDUCATION PhDs BY SUBFIELD AND SEX, 1960 – 1989

SUBFIELD	Total				Women				%Women						
	1986	1987	1988	1989	1986	1987	1988	1989	'20–72	'73–82	'83–85	1986	1987	1988	1989
EDUCATION, TOTAL (1)	6602	6447	6339	6265	3590	3550	3507	3605	20.0	37.3	51.9	54.4	55.1	55.4	57.5
Curriculum and Instruction	787	761	810	836	485	479	503	542	34.4	44.7	61.7	61.6	62.9	62.1	64.8
Ed Admin & Supervision (5)	1622	1685	1737	1620	748	783	820	773	8.4	24.1	40.4	46.1	46.5	47.2	47.7
Educational Media (4)	79	68	67	75	40	36	26	30	10.7	25.1	42.4	50.6	52.9	38.8	40.0
Ed Statistics & Research (12)	57	73	50	58	36	40	26	36		33.9	49.4	63.2	54.8	52.0	62.1
Ed Testing, Eval, & Meas(12)	47	37	55	42	27	20	26	26	15.9	33.9	45.7	57.4	54.1	47.3	61.9
Ed & School Psychology (4)	415	410			247	238			29.2	44.6	56.0	59.5	58.0		
Educational Psychology (14)			321	298			200	176						62.3	59.1
School Psychology (14)			98	85			53	57						54.1	67.1
Social Foundations	122	114	122	112	60	56	56	61	22.7	33.4	40.5	49.2	49.1	45.9	54.5
Special Education (4)	273	248	257	256	197	185	194	204	27.9	50.8	68.0	72.2	74.6	75.5	79.7
Student Counselling, Pers (4)	315	315	322	268	165	176	185	158	21.3	38.8	50.4	52.4	55.9	57.5	59.0
Higher Education (3)	609	568	399	369	308	307	222	207	18.4	32.3	49.4	50.6	54.0	55.6	56.1
Pre–elementary Education (10)	84	73	83	63	69	64	73	51			81.0	82.1	87.7	88.0	81.0
Elementary Education (2)	94	105	93	100	71	85	71	80	41.5	61.9	72.3	75.5	81.0	76.3	80.0
Secondary Education(2)	88	66	68	53	45	31	38	25	17.0	34.0	55.5	52.3	47.0	55.9	47.2
Adult & Continuing Ed (3)	223	204	229	236	123	125	125	153	20.7	36.0	52.9	55.2	61.3	54.6	64.8
TEACHING FIELDS	1141	1065	986	971	592	578	538	542	21.1	40.7	51.8	51.9	53.8	54.6	55.8
Agricultural Education (2)	39	39	32	35	4	5		7	1.7	4.7	15.7	10.3	12.8		20.0
Art Education (6)	43	52	42	39	24	33	27	18	27.9	47.2	54.9	55.8	63.5	64.3	46.2
Business Education (6)	50	36	44	40	29	21	17	25	29.3	39.0	58.4	58.0	58.3	38.6	62.5
English Education (6)	79	72	57	51	53	54	41	35	29.1	52.2	66.7	67.1	75.0	71.9	68.6
Foreign Languages Ed (6)	36	37	53	34	24	16	36	22	29.2	50.9	47.5	66.7	43.2	67.9	64.7
Health Eduation (10)	81	91	86	101	55	61	67	75			66.3	67.9	67.0	77.9	74.3
Home Economics Education (6)	17	17	17	19	17	17	17	18	96.9	97.7	93.1	100	100	100	94.7
Industrial Arts Education (6)	20	24	11	17	0	4	2	3	0.4	3.1	11.9	0.0	18.7	18.2	17.6
Mathematics Education (6)	72	74	55	68	33	38	31	41	16.5	31.1	53.4	45.8	51.4	56.4	60.3
Music Education (6)	94	109	76	98	32	56	29	35	13.8	29.6	35.2	34.0	51.4	38.2	35.7
Nursing Education (11)	40	36	34	29	37	36	32	29		98.9	94.9	92.5	100	94.1	100
Physical Education (13)	210	192	183	177	80	80	82	77	27.4	34.8	41.2	38.1	41.7	44.8	43.5
Reading Education (8)	134	94	74	95	112	82	65	83		76.7	77.4	83.6	87.2	87.8	87.4
Science Education (2)	65	63	67	48	22	23	27	22	19.4	23.0	37.0	33.8	36.5	40.3	45.8
Social Science Education (6)	22	17	23	13	7	9	5	6	18.0	29.0	47.6	31.8	52.9	21.7	46.2
Speech Education (7)	5	5	5	1	3	4	4			58.4	63.2	60.0	80.0	80.0	0.0
Technical Education (14)			13	28			3	12						23.1	42.9
Trade & Industrial Ed (6)	86	69	67	47	36	20	26	14	5.6	28.5	32.9	41.9	29.0	38.8	29.8
Other Teaching Fields (9)	48	38	47	31	24	19	27	20	41.2	59.9	48.6	50.0	50.0	57.4	64.5
Education, General (1)	352	369	363	428	189	192	196	249	19.7	41.2	49.9	53.7	52.0	54.0	58.2
Education, Other (2)	296	286	279	395	188	155	155	235	30.5	50.8	53.7	63.5	54.2	55.6	59.5

(1) "Education," many fields listed as a single field until 1960, then as 16 subfields plus "Education, Genaral," in 1960. (2) Added in 1966. (3) Added in 1971. (4) Added in 1962, split into "Educational Psychology" & "School Psych" in 1989 (5) Added in 1960 as "Administration" changed in 1962 to "Admin, & Supervision." (6) Added in 1963. (7) Added in 1975. (8) Added in 1976. (9) Added in 1963 as "Other Special Field," changed in 1968 to "Other Fields" (meaning other teaching fields). (10) Added in 1983. (11) Added in 1980. (11) Name changed in 1983. (13) Name changed from "Physical Education, Health & Recreation" to Physical Education" in 1963. (14) Added in 1989.

SOURCE: Office of Personnel Management, unpublished tabulations

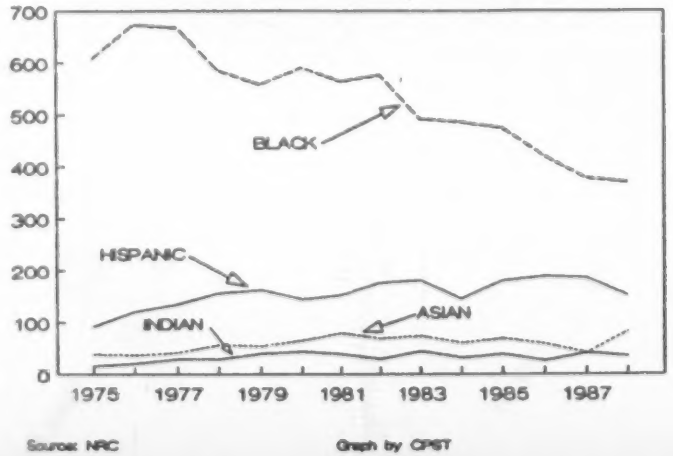
TABLE 10-5

FEDERAL WORKERS EMPLOYED IN EDUCATION BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1990

OCCUPATIONAL TITLE	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
General Education & Training	14114	10704	75.8	1832	13.0	1524	83.2	1144	8.1	322	2.3	209	1.5	157	1.1	12282	87.0
Education & Vocational Training	9172	4871	53.1	2291	25.0	1501	65.5	770	8.4	412	4.5	152	1.7	957	10.4	6881	75.0
Education Program	485	257	53.0	184	37.9	116	63.0	142	29.3	27	5.6	4	0.8	11	2.3	301	62.1
Public Health Education	33	23	69.7	17	51.5	11	64.7	2	6.1	0	0.0	0	0.0	15	45.5	16	48.5
Education Research	68	29	42.6	10	14.7	3	30.0	3	4.4	3	4.4	4	5.9	0	0.0	58	85.3
Education Services	61	15	24.6	10	16.4	6	60.0	6	9.8	4	6.6	0	0.0	0	0.0	51	83.6
Instructional Systems	96	44	45.8	14	14.6	9	64.3	9	9.4	2	2.1	3	3.1	0	0.0	82	85.4
Museum Crurator	364	134	36.8	29	8.0	14	48.3	15	4.1	4	1.1	4	1.1	6	1.6	335	92.0
TOTALS	24393	16077	65.9	4387	18.0	3184	72.6	2091	8.6	774	3.2	376	1.5	1146	4.7	20006	82.0

CHART 10-1

EDUCATION PhD AWARDS TO MINORITIES, 1975 - 1988



Source: NRC Graph by CPST

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INDEX

A
Accounting
Degrees 88, 91, 112, 117-118
Freshman Placement 118
Freshman Plans of Graduates 25
Work Force 118-119
ACT 16
Actor/Entertainer
Freshman Plans 25
Work Force 127, 133
Adjusters & Investigators 128
Aeronautical Eng 132, 189, 191-193, 198-200
Agriculture
Degrees 54-55, 58-59, 83-86, 88, 91, 94-102, 223, 225-229
Enroll 37, 39, 42-44, 46-49
Faculty 131, 143-144
Freshman Plans 20, 23
Workforce 126, 131-132, 134-138
Federal 230
Agricultural Economics Enroll 42-44, 46-49
Agricultural Engineers 132
Agronomy 223
Airplane Pilots 128
Algebra High School 21
American Studies Degrees 260
Anatomy Enroll 42-44, 46-49
Animal Science Degrees 88, 91, 223, 230
Anthropology
Degrees 54-55, 58-59, 90, 93, 252, 256
Enroll 42-44, 46-49
HS Courses 21
Archeology Degrees 90, 93, 252, 260
Architecture
Degrees 88, 91, 94-99, 112, 115
Enroll 37-39, 116
Freshman Plans 25
Workforce 116, 127
Area Studies Degrees 88, 91, 94-99, 252
Art Faculty 131
Art History Degrees 260
Artist
Freshman Plans 25
Workforce 127-128, 133
Arts & Humanities
Freshman Plans 23
Asian
Degrees 69
Eng Schools Awarding Most 209
Associate Degrees 108-111
Engineering Technology 221
to Minorities 108-110
Astronomy
Degrees 90, 93, 161, 167-169
Astronomy (continued)
Enroll 42-44, 46-49, 171
Astronomers, Federal 162
Astrophysics Degrees 90, 93
Athletes 133
Atmospheric Sciences
Degrees 90, 93, 172-176
Enroll 42-44, 46-49
Workforce 131, 134-138
Audiology, Speech/Pathology
Degrees 90, 93, 231
B
Bacteriology 224
Behavioral Science GRE 41
Biochemistry
Degrees 90, 93, 163, 224
Enroll 42-44, 46-49
Biology
Degrees 54-55, 58-59, 84-86, 90, 93, 224-229
Faculty 131, 143-144, 147
Freshman Plans 20, 23-24
High School Course 21
Fed Workforce 230
Graduate Record Exam 41
Workforce 126-127, 131, 134-138
Biometrics Degrees 224
Biometry Enroll 42-44, 46-49
Biophysics Enroll 42-44; 46-49
Births U.S. 5
Black (see also Minorities)
Degrees 70, 100
Engineering, Most by School 207
Botany
Degrees 90, 93, 224, 239
Enroll 42-44; 46-49
Business
Degrees 54-55, 58-59, 83, 88, 91, 94-99, 112, 117
Enroll 37-39
Faculty 131
Manager, Freshman Plans 20, 23, 25-26
Workforce 126-127
C
Calculus, High School 21
Carnegie Units 14
Cartography Workforce 162
Cell Biology
Degrees 90, 93, 224
Enroll 42-44, 46-49
Chemical Engineering
Degrees 89, 92, 189, 191-193, 198-201
Workforce 132
Chemistry
Degrees 54-55, 58-59, 90, 158-161, 163-165
Enroll 42-44, 46-49
Chemistry (continued)
Faculty 131, 143-144, 147
High School Course 21
Workforce 127, 131, 134-138, 166
Federal 162
Chiropractic Degrees 113-114
Chiropractors 244
Civil Engineering
Degrees 189, 191-193, 198-201
Workforce 132
Classics Degrees 260
Clergy
Freshman Plans 25
Workforce 126-127, 133
Clerical Work, Freshman Plans 25
College Presidents, Women 154
College Teacher, Plans to be 26
Communications
Degrees 54-55, 58-59, 83, 88, 91, 93-99, 112
Enroll 39
Comparative Lit Degrees 260
Computer
Engineering 189, 198-200, 202
Equipment Operator 128
Operators 128
Programmers 128
Freshman Plans 26
Systems Analysts 127, 131
Computer Science
Degrees 54-55, 58-59, 61, 66-72, 83-86, 88, 91, 94-102, 161, 180-185
Enroll 39
Faculty 131, 143-144, 147-148
Graduate Support for PhD 78-81
Freshman Plans 20, 23-24
Workforce 131, 134-139,
Federal 188
Counselors 127, 131
Freshman Plans 25
CPA, Minority 118
Criminology Degrees 90, 93, 252
Cytology 224
D
Data Processing Degrees 88, 91
Degrees
Accounting 88, 91, 112, 117-118
Agriculture 54-55, 58-59, 83-86, 88, 91, 94-102, 223, 225-229
Agronomy 223
American Studies 260
Animal Science 88, 91, 223, 230
Anthropology 54-55, 58-59, 90, 93, 252, 256
Archeology 90, 93, 252, 260
Architecture 88, 91, 94-99, 112, 115
Area Studies 88, 91, 94-99, 252

Degrees (continued)
Art 260
Art History 260
Associate 108-111
Engineering Technician 221
Astronomy 90, 93, 161, 167-169
Astrophysics 90, 93
Atmospheric Sciences 90, 93, 172-176
Audiology 90, 93, 231
Bacteriology 224
Biochemistry 90, 93, 163, 224
Biology 54-55, 58-59, 84-86, 90, 93, 224-229
from Black Colleges 100
Botany 90, 93, 224, 239
Business 54-55, 58-59, 83, 88, 91, 94-99, 112, 117
Cell Biology 90, 93, 224
Chemical Engineering 89, 92, 189, 191-193
Chemistry 54-55 58-59, 90, 93, 158-161, 163-165
Chiropractic 113-114
Civil Engineering 189, 191-193, 198-201
Classics 260
Communications 54-55, 58-59, 83, 88, 91, 94-99, 112
Comparative Literature 260
Computer Science 54-55, 58-59, 66-72, 83-86, 88, 91, 93-104, 161, 180-185
Criminology 90, 93, 252
Data Processing 88, 91
Demography 252
Dentistry 113-114, 238
Design 90, 93
Dramatic Arts 90, 93
Earth Science 54-55, 58-59, 66-70, 90, 93, 172-176
Economics 54-55, 58-59, 90, 93, 252-255
Econometrics 252
Education 53-55, 58-59, 64, 71-72, 83, 88-89, 91-92, 94-99, 261-262
Engineering 53-55, 58-59, 62, 66-68, 83-86, 89, 91, 93-102, 189-211
Engineering Fields 89, 92, 189, 191-193
Engineering Technology 89, 92, 197, 218-221
Environmental Health 231
Environmental Science 172-176, 231
Epidemiology 231
Film Arts 90, 93
Fine Arts 90, 93, 260
First Professional 112-115

Degrees (continued)
Foreign 55-57, 66-69, 71-72
Foreign Languages 83,89, 91, 94-99, 260
Forestry 88, 91, 223
Freshman Plans 74-76
Genetics 224
Geography 90, 93, 252
Geology 90, 93, 158-161, 172-176
Geosciences 172-176
Health Sci 54-55, 58-59, 83, 89, 92, 94-99, 231
Health Service Administration 249
History 90, 93, 260
History of Science 252, 260
Home Economics 90, 93, 112
Hospital Administration 231
Humanities 53-55, 58-59, 62, 71-72, 83
Human Resources Development 88, 91
Information Sciences 88, 91, 94-99
International Relations 90, 93, 252
Journalism 88, 91, 112
Labor/Industrial Relations 88, 91
Law 90, 93-99, 113-114, 120
Letters 260
Life Sciences 53-55, 58-60, 66-68, 83-86, 90, 93-102
Linguistics 252, 260-261
Marketing 88, 91, 112
Mathematics 54-55, 58-59, 66-72, 83-86, 90, 93-104, 180-185
Medical Lab Technology 89, 92, 252
Medicine 113-114, 231, 236
Microbiology 90, 93, 224
Military Science 90, 93-99
Minorities 54-65, 67-71, 97-105
Molecular Biology 224
Music 90, 93, 260
Nursing 90, 93, 246
Oceanography 90, 93, 172-176
Optometry 113-114, 243
Osteopathy 113-114, 244
Parks/Recreation 90, 93-99
Personnel Management 88, 91
Pharmacy 90, 93, 113, 231, 239-241
Philosophy/Religion 90, 93-99, 260
Physics/Astronomy 54-55, 58-59, 90, 93, 158-161, 167-169
Physical Sciences 53-55, 58-59, 61, 66-72, 83-86, 90, 93-102, 158-161
Physical Therapy 250
Phytopathology 223
Podiatry 113-114, 244

Degrees (continued)
Political Science 54-55, 58-59, 90, 93, 252-255
Professional, First 53-55, 58-59, 64, 71-72, 83
Psychology 54-55, 58-59, 66-71, 83-86, 90, 93, 94-102, 252, 258
Public Policy 252
Radio/TV 88, 91
Religion 260
S&E 65-72, 84-86, 100-105
Sociology 54-55, 58-59, 90, 93, 252-255
Social Sciences 53-55, 58-59, 63, 66-72, 83-86, 90, 93-102,
Social Sciences (cont.) 252-255
Social Work 257
Speech 90, 93
Speech-Lang/Audiol 249
Statistics 186
Theatre 260
Theology 90, 93-99, 113
Toxicology 224
Urban Studies 252
Veterinary 113-114, 247
Visual/Performing Arts 90, 93-99
Wildlife Management 88, 91
Zoology 90, 93, 224
Degrees per 1000 30-yr-olds 107
Demography Degrees 252
Dentistry
Degrees 113-114, 238
Enroll 37-38, 42-44, 46-49, 238
Faculty 239
Freshman Plans 25
Workforce 126-127, 133, 237, 251
Design Degrees 90, 93
Designers 133
Dietician 127, 133, 251
Freshman Plans 25
Disabled Scientists/Engineers 142
Disabled Students Enroll 36
Drama Faculty 131
Dramatic Arts Degrees 90, 93
E
Earth Science
Degrees 54-55, 58-59, 66-70, 90, 93, 172-176
Enroll 178
Graduate Support, Phd 78-81
Faculty 131, 143-144
Workforce 134-138
Ecology 224, 230
Enroll 42-44, 46-49
Economics
Degrees 54-55, 58-59, 90, 93, 252-255
Enroll 42-44, 46-49
Faculty 131, 143-144
High School Course 21
Workforce 126-127, 133-138

Econometrics Degrees 252-256
Editors 128, 133
Education
Degrees 53-55, 58-59, 64, 71-72, 83, 88-89, 91-92, 94-99, 261-262
Faculty 131
Freshman Plans 20, 23
Graduate Support for 52
Workforce 126-127
Federal 263
Educational Level of Population 7
Electrical/Elec Engineering
Degrees 190-193, 198-200, 202
Workforce 132
Embryology 224
Engineering
Degrees 53-55, 58-59, 62, 66-72, 83-86, 89, 91, 94-102, 189-211
Enroll 37-39
Graduate 42-49, 213-217
Faculty 131, 143-144, 146, 148
Freshman Plans 20, 23-26
Graduate Support for 52
PhD 78-81
Graduate Record Exam 41
Nuclear 216
Workforce 126-127, 134-139
Federal 222
Engineering Fields
Degrees 89, 92, 189, 191-193, 198-200
Enroll 42-44, 46-49, 215
Workforce 126-127, 132, 134-139, 222
Engineering Technicians 128
Engineering Technology
Degrees 89, 92, 197, 218-219, 220-221
Enroll 221
Workforce 133
English Faculty 131, 149-150
English/Journalism Workforce 126
Enrollments 8, 27-40, 42-49
by Age 31-32
Agriculture 37-39, 42-49
Agric'al Economics 42-44, 46-49
Anatomy 42-44, 46-49
Anthropology 42-44, 46-49
Architecture 37-39, 116
Archeology 37-39
Astronomy 42-44, 46-49
Atmospheric Sci 42-44, 46-49
Biological Sciences 42-49
Biomedical Sciences 42-49
Biophysical Sciences 42-49
Business 37-39
Chemistry 42-44, 46-49
Communications 39
Computer Sciences 39, 42-49
Dentistry 37-38, 42-44, 46-49, 238
Disabled Students 36
Enrollments (continued)
Drama 131
Earth Sciences 178
Education 131
Economics 42-44, 46-49
Engineering 37-39, 42-49, 212-217
Engineering Technology 221
English 39
Environmental Sciences 42-49
First Professional 40
Freshman and Total 27
Foreign 39, 43-44, 46, 48-49
Geoscience 44-49, 177-178
Graduate 40, 42-49
Health Professions 38
High School Graduates 28-29
History of Science 42-44, 46-49
Home Economics 39
Industrial Arts 39
Law 37-39, 121
Law Enforcement 39
Letters 39
Library Science 39
Life Sciences 37-39, 42-49
Mathematics 37-39, 42-49
Medicine 37-39, 233-234, 236
Military Science 39
Mineralogy 178
Minorities 27-29, 32-36
Freshmen 22
by State 22
Nursing 42-44, 46-49
Oceanography 177
Optometry 243
Osteopathy 244
Paleontology 178
Parks and Recreation 39
Pharmacy 241-242
Pharmaceutical Sci 42-44, 46-49
Philosophy 39
Physical Sciences 37, 39, 42-49
Physics 170-171
Podiatry 245
Psychology 39, 42-49
Rates, College 31-32
Social Sciences 39, 42-49
Speech Pathology 42-44, 46-49
Theology 39
Veterinary Sci 37-38, 42-44, 46-49, 247
Visual Arts 39
Entomology Enroll 42-44, 46-49
Environmental Health 231
Environmental Science
Degrees 172-176
Enroll 42-49
Faculty 146-148
Workforce 134-139
Epidemiology 231
Executive, Freshman Plans 25
Executives 127
F
Faculty 131, 143-150, 153-155
Agriculture 131, 143-144
Art, Drama, Music 131
Biology 131, 143-144, 147
Business 131
Chemistry 131, 143-144, 147
Computer Science 131, 143-144, 147-148
Dentistry 239
Drama 131
Earth Science 131, 143-144
Economics 131, 143-144
Education 131
Engineering 131, 143-144, 146, 148
English 131, 149-150
Environmental Sciences 146-148
Foreign Languages 131, 149-150
Geology 179
Health Sciences 131
History 131, 149-150
Home Economics 131
Humanities 150
Law 131
Life Sciences 146, 148
Mathematics 131, 143-145, 147-148, 187
Medical Sciences 131, 143-144, 147, 235
Minority 145-146, 148, 155
Physical Education 131
Physics 131, 143-144, 147
Political Science 131
Psychology 131, 143-144, 146-148, 258
Sociology 131, 144-145
Social Sciences 131, 143-144, 147-148
Social Work 131
Theology 131
Trade, Industrial Arts 131
Veterinary Medicine 248
Farmer Freshman Plans 25
Farming Workforce 130
Federal Workforce
Astronomy 162
Biology, Agriculture 230
Chemistry 162
Computer Sciences 188
Dietitian 251
Education 263
Engineering 222
Geosciences 162
Health 251
Hydrology 162
Law 122
Mathematics 188
Medical Specialties 251
Metallurgy 162

Federal Workforce (continued)
Meteorology 162
Nursing 251
Oceanography 162
Physical Sciences 162
Social Sciences 259
Statistics 188
Film Arts Degrees 90, 93
Financial Managers 132
Fine Arts Degrees 90, 93, 260
First Professional Degrees 112-115
Food Techician Workforce 162
Foreign Degrees
Agriculture and Biology 2
Engineering 195-203
Leading Schools 210-11
Social Sciences 257
PhD Postgraduate Plans 73-76
Postdoctorates 151
Foreign Enroll 39, 43-44, 46, 48-49
Graduate 43-44, 46-48
Graduate Support 80-81
Foreign Languages
Degrees 83, 89, 91, 94-99, 260
Faculty 131, 149-150
Foreign Service, Freshman Plans 25-26
Forestry
Degrees 88, 91
Freshman Plans 25
Workforce 130-131
Freshman
Enroll 27
Minority 22
Plans 23, 25-26
Funeral Directors 132
G
Genetics 230
Enroll 42-44, 46-49
Geochemistry Enroll 177
Geodesy Workforce 162
Geography
Degrees 90, 93, 252
Enroll 42-44; 46-49
Geology, Geological Sciences
Degrees 90, 93, 158-161, 172-176
Enroll 42-44, 46-49, 177-178
Faculty 179
Workforce 127, 131
Federal 162
Geometry High School 21
Geophysics Enroll 177
Geophysics Workforce 162
Graduate Degree Attainment Rate 106
Graduate Student Support 50-52
Graduate Record Exam Scores 41
H
Health Physics/Radiation Protection Degrees 217
Health Professions
Enroll 38
Freshman Plans 23-24
Federal Work Force 251
Health Sciences
Degrees 54-55, 58-59, 72, 83,89, 92, 94-99, 231
Faculty 131
Health Services Administration Degrees 249
Health Technicians 128
Hispanic (see also Minorities)
Degrees Phd 70
Employment and Education Level 124
Engineering, Most by School 208
History of Science
Degrees 252
Enroll 42-44; 46-49
History
Degrees 90, 93, 260
Faculty 131, 149-150
Home Economics
Degrees 90, 93, 112
Faculty 131
Workforce 126
Horticulture 230
High School
Credits in Math, Sci 19, 21
Graduates 29
in coll 30
and Population 9
Humanities
Degrees 53-55, 58-59, 63, 71-72, 83
Graduate Support for 52
Workforce 126
Hydrology
Degrees 172-176
Enroll 178
Workforce, Federal 162
I, J
Immigrant Scientists/Engineers 140-141
Industrial Engineers 132, 189, 191-193, 198-200, 202
Faculty 131
Infomation Sciences Degrees 88, 91, 94-99
International Relations Degrees 90, 93, 252
Journalism
Degrees 88, 91, 112
Freshman Plans 25
Judges 133
L
Laboratory Technician Freshman Plans 25
Labor/Industrial Relations Degrees 88, 91
Law
Degrees 90, 93-99, 113-114, 120
Enroll 37-39, 121
Faculty 131
Freshman Plans 25-27
Workforce 126-127, 133
Federal 122
Law Enforcement
Enroll 39
Freshman Plans 25
Legal Assistants 128
Letters Degrees 83, 90, 93, 99, 260
Library Sciences
Degrees 83, 90, 93, 99, 112
Workforce 127, 131
Liberal Arts Workforce 126
Liberal Studies Degrees 83, 94, 99
Life Sciences
Degrees 53-55, 58-59, 60, 66-72, 83-86, 94-102
Enroll 37-39, 42-49
Faculty 146-148
Graduate Support for 52, 78-81
Workforce 134-139
Linguistics
Degrees 252, 260-261
Enroll 42-44, 46-49
M
Mail Occupations 128
Major, Freshman Plans for 20, 23
Major of Merit Scholars 24
Managers 132
by Years of School 124
Marine Engineering Workforce 132
Marketing Degrees 88, 91
Mathematics
Degrees 54-55, 58-59, 61, 66-72, 83-86, 90, 93-102, 161, 180-185
Enroll 37-39, 42-49
Faculty 131, 143-145, 147-148, 187
Freshman Plans 20, 23-24
Graduate Support for PhD 78-81
Graduate Records Exam 41
High School Credits 19
Workforce 131, 134-139, 187
Federal 188
Mechanical Engineering 132, 189, 191-193, 198-200, 202
Medical
Lab Technology Degrees 89, 92, 250-251
Sciences
Faculty 131, 143-144, 147, 235
Medicine
Degrees 113-114, 231-232, 235-236
Enroll 37-39, 232-234, 236
Faculty 235

Medicine (continued)
Freshman Plans 23
Workforce 126-127
Federal 251
by Medical Specialty 237
Merit Scholars, Majors of 24
Metallurgy
Engineering Workforce 132
Federal Workforce 162
Meteorology, Federal Workforce 162
Microbiology
Degrees 90, 93, 224
Enroll 42-44, 46-49
Military Sciences
Degrees 90, 93, 99
Enroll 39
Freshman Plans 25
Mineralogy Enroll 178
Mining Eng Workforce 132
Minorities
Accounting 118-119
Anthropology 256
Associate Degrees 108-110
Chemistry 164-165
Computer Science 182
Degrees 54-65, 67-71, 97-105
Dentist 238-239
Economics 256
Engineering 195-203, 206-209, 213-215
Engineering Technology 197, 219, 221
Enrolled 27-29, 32-36, 44, 46-47
Environmental Science 176
Faculty 155
in Science/Engineering 145-146, 148
Mathematics 182
Medicine 233-236
Nursing 246
Pharmacy 239-242
Physics 167, 169-170
Podiatry 245
Political Science 256
Sci/Eng Postdocs 152
Sociology 256
Social Sciences 256
Support During PhD 78-80
Teachers 155-156
in the U.S. 6
Workforce 127-133
Federal 259
Computer Sciences 188
Education 263
Engineering 222
Health Sciences 251
Law 122
Mathematics 188
Medical Specialties 251
Physical Sciences 162
Minorities (continued)
Workforce
Science/Engineering 134-139
Statistics 188
Years of School Completed 123, 125
Molecular Biology 224
Music
Degrees 90, 93, 260
Freshman Plans 25
Musicians 127, 133
N
Neurology Enroll 42-44, 46-49
Nuclear Engineering 216
Workforce 132
Nursing
Degrees 90, 93, 231, 246
Enroll 42-44, 46-49
Freshman Plans 25
Workforce 126-127, 133, 246
Federal 251
Nutrition Enroll 42-44, 46-49
O
Occupation by Yrs of School 124
Oceanography
Degrees 90, 93, 172-176
Enroll 177
Graduate 42-44, 46-49
Workforce 134-138
Federal 162
Operations Research/Analysis
Workforce 127
Operators 130
Optometry
Degrees 113-114, 243
Enroll 243
Freshman Plans 25
Workforce 133, 237
Osteopathy
Degrees 113-114, 244
Enroll 244
P
Paleontology Enroll 178
Parks/Recreation Degrees 90, 93-99
Pathology Enroll 42-44, 46-49
Personnel Management Degrees 88, 91
Personnel Managers 132
Petroleum Engineering Workforce 132
Pharmacy
Degrees 90, 93, 113-114, 239-241
Enroll 241-242
Freshman Plans 25
Pharmaceutical Sciences
Enroll 42-44, 46-49
Pharmacists 127, 133, 237
Pharmacology
Degrees 231
Pharmacology (continued)
Enroll 42-44, 46-49
PhD Degrees 53-73
PhD Postgraduate Plans 73-76
PhD Recipients, Support for 77-81
Philosophy/Religion Degrees 90, 93-99, 260
Photographers 127-128, 133
Physical Education Faculty 131
Physics
Degrees 54-55, 58-59, 90, 93, 158-161, 167-169
Enroll 42-44, 46-49, 170-171
Faculty 131, 143-144, 147
High School Course 21
Workforce 126-127, 131
Federal 162
Physical Sciences
Degrees 53-55, 58-59, 61, 66-72, 83-86, 90, 93-102, 158-161
Enroll 37-39, 42-49
Freshman Plans 23-24
Graduate Support for 52, 78-81
Workforce 126-127, 131, 134-139
Federal 162
Physical Therapy Degrees 250
Physician 127, 133, 237 (see also Medicine)
Freshman Plans 25-26
Physiology Enroll 42-44, 46-49
Podiatry
Degrees 113-114, 244
Enroll 245
Workforce 133, 251
Political Sciemce
Degrees 54-55, 58-59, 90, 93, 252-256
Enroll 42-44, 46-49
Faculty 131
Police Sci Workforce 126, 129
Population
United States 6
by Age 7, 8
High School Graduates 9
by Years of College 30
by Years of School 123, 125
Postdoctoral Plans 73-76
Postdoctorates, S&E 151-152
Precision Workers 129
Professional Degrees 53-55, 58-59, 64, 71-72, 83
Graduate Support for 52
Protective Service Degrees 83, 90, 93-99
Psychology
Degrees 54-55, 58-59, 63, 66-72, 83,90, 93-102, 252, 258
Enroll 42-49
Faculty 131, 143-144, 146-148, 258
Freshman Plans 25-26

Psychology (continued)
Graduate Support 78-81
High School Course 21
Workforce 126-127, 133-138
Public Policy Degrees 252
Public Administration Degrees 112
R
Radio/TV Degrees 88, 91, 112
Recreation Workers 127, 133
Religion
Degrees 260
Workforce 126-127, 133
S
Sales Representatives 128
SAT Scores 15
Science, High School Credits 19
Science and Engineering
Degrees 65-72, 84-87, 100-104
Graduate Degree Attainment Rates 106
Workforce 134-140
Disabled 142
Immigrant 140-141
Postdoctorates 151
School, Yrs Completed by Age 123-124
Science Technicians 128, 133
Science Researcher, Freshman Plans 25-26
Secretaries 128
Service Occupations 128-129
Sociology
Degrees 54-55, 58-59, 90, 93 252-256
Enroll 42-44, 46-49
Faculty 131, 143-145
High School Courses 21
Workforce 133-138
Social Sciences
Degrees 53-55, 58-59, 63, 66-72,83-86, 90, 93-102
Enroll 39, 42-49
Faculty 131, 143-148
Freshman Plans 20, 23-24
Graduate Support for 52, 78-81
Graduate Record Exam 41
High School Credit 21
Workforce 126-127, 133-139,
Social Work
Degrees 112, 257
Faculty 131
Freshman Plans 25-26
Workforce 127, 133
Soil Science 230
Enroll 178
Speech/Debate Degrees 90, 93, 260
Speech Pathology 251
Degrees 249
Enroll 42-44, 46-49
Statistics
Degrees 186, 252
Freshman Plans 25-26
Workforce 134-138
Support
for Grad Students 50-52
for PhD Recipients 77-81
Surveyors 132
T
Teacher Freshman Plans 25-26
Teachers 127, 131, 155-157
Minority 155
Technical Writers 133
Technicians 108-111, 128, 133, 221
Technology, Engineering Degrees 89, 92, 197, 218-221
Tenure 153
Humanities Faculty 150
Science/Engineering Faculty 147-148
Test Scores
ACT 16
Achievement 18
Advance Placement 17
International Math/Sci 12-13
Mathematics 10-11
SAT 15-17
Science 10-11
Theatre Degrees 260
Theology
Degrees 90, 93-99, 112-114
Faculty 131
Therapist 127, 133, 251
Freshman Plans 25
Toxicology 224, 230
Transportation Workforce 130
Trigonometry, High School 21
Typists 128
U
Unemployment Rates, Recent Science/Engineering Grads 139
Urban Studies
Degrees 252
Freshman Plans 133
V
Veterinary Medicine
Degrees 113-114, 231, 247
Enroll 37-39, 42-44, 46-49, 247
Faculty 248
Freshman Plans 25
Workforce 133, 237, 248, 251
Visual/Performing Arts
Degrees 90, 93-99
W
Wildlife Management Degrees 88, 91, 223
Women's College Presidents 154
Women
Engineering, Most by School 204-205
Women (continued)
Medical Specialties 237
Support for Graduate Study 77-80
Writer 127, 133
Freshman Plans 25
Zoology 230
Degrees 90, 93
Enroll 42-44, 46-49